

## The Straits Settlements Medical Report for 1902.

1. The estimated population for the whole of the Straits Settlements for the year 1902 was 581,219. The Births registered were 14,521 and the Deaths 24,970; giving respectively Birth and Death rates of 24.98 and 42.96 per mille.

The annexed table gives the same data for the two previous years compared with those of the year under Review.

	Estimated mean Population.	Births.	Deaths.	Birth ratio per mille.	Death ratio per mille.
1900	567,084	14,814	22,385	26.12	39.47
1901	574,028	14,568	22,876	25.37	39.85
1902	581,219	14,521	24,970	24.98	42.96

This shows that the present year continues the fall in Birth-rate and rise in Death-rate which occurred in 1901.

For the several Settlements the data are as follows:—

	Estimated mean Population 1902.	Births.	Deaths.	Birth ratio.	Death ratio.
Singapore	235,301	4,852	12,485	20.62	53.06
Penang	129,456	2,379	5,787	18.37	44.67
Province Wellesley	116,267	3,698	3,476	31.82	29.90
Dindings	4,181	135	185	32.29	44.25
Malacca	95,924	3,457	3,037	35.50	31.66

2. The public health of the Colony for 1902, taking the death-rate as our guide was not good; Singapore, Penang and the Dindings showing higher rates of mortality than for 1901. The heightened mortality in Singapore and Dindings is notable.

3. *Small-pox*.—There were reported 159 cases of Small-pox in Singapore, 399 cases in Penang and Province Wellesley, and 57 cases in Malacca. The majority of these were treated in Government Hospitals. In Malacca a number of cases were treated in their own homes which were isolated for the purpose; 29 were treated in Hospital with 5 deaths.

*Cholera*.—There were 842 cases of Cholera reported in Singapore, 759 of these proving fatal. In Penang and Province Wellesley there were 92 cases reported with 67 deaths. No cases were reported from Malacca.

*Enteric Fever*.—There were 217 cases reported in Singapore, 35 in Penang and 2 in Malacca.

*Measles and Chicken-pox*.—A few cases of Measles and Chicken-pox were reported at each of the Settlements.

*Plague*.—There were 4 cases of Plague reported in Singapore, all of which proved fatal. They were in different parts of the Town and were all bubonic. There were no cases reported from the other Settlements.

4. There was an increase in the number of cases of Beri-beri admitted to the various Hospitals, there being 1,901 as against 1,817 during the previous year. The number of deaths shows a great increase, being 1,607 against 697 in 1901.

5. The admissions to all the Hospitals from Venereal Diseases for the year numbered 3,149 as compared with 2,341 and 1,952 for 1901 and 1900 respectively, and the number of deaths recorded to be due to this cause was 171 against 90 in the previous year.

6. The reports from the various Hospitals throughout the Settlements shew, generally speaking, that the amount of work done, as compared with former years,

has been maintained and in some cases exceeded, especially in the case of the General Hospital, Singapore.

7. The report on the Lunatic Asylum by Dr. ELLIS, the Medical Superintendent, shows a good recovery-rate and a great fall in the death-rate from Beri-beri.

The health of the prisoners has not been satisfactory. There have been more admissions to Hospital and a higher average daily sick.

There has also been an increase in the number of cases of Beri-beri but a lower death-rate from this cause than in 1901.

The work done in the Maternity Hospital equals that of 1901.

8. The total number of admissions to all Hospitals for 1902 was 25,783 and of deaths 4,474 as against 25,329 and 4,016 in 1901, giving a death percentage of 17.35 as against 15.85 in 1901.

9. The diseases responsible for the greatest number of admissions and deaths are shewn in the subjoined table compared with the corresponding diseases and deaths during 1901.

#### I.—General Diseases.

Diseases.	1901.		1902.	
	Admissions.	Deaths.	Admissions.	Deaths.
Dysentery ... ..	800	300	866	262
Malarial Fever and Cachexia ...	2,290	153	2,938	277
Beri-beri ... ..	1,817	697	1,901	575
Phagedœna ... ..	187	60	200	45
Tubercle of Lungs ... ..	904	514	699	355
Venereal Diseases ... ..	2,341	90	3,149	171
Rheumatism (acute and chronic) ...	917	1	436	...
Anæmia ... ..	867	233	761	197
Debility ... ..	928	290	926	272

#### II.—Local Diseases.

Diseases.	1901.		1902.	
	Admissions.	Deaths.	Admissions.	Deaths.
Disease of the Nervous System (including admissions to the Lunatic Asylum less cases transferred there from other hospitals) ...	697	127	675	113
Disease of the Respiratory System (not including Phthisis) ...	476	89	915	271
Disease of the Digestive System (including Diarrhœa) ...	2,359	816	2,367	682
Disease of the Skin ... ..	3,430	14	2,155	5

#### III.—Injuries.

	1901.		1902.	
	Admissions.	Deaths.	Admissions.	Deaths.
General and Local ... ..	1,689	67	1,521	54



10. The work entailed by the Quarantine Regulations continues to be heavy in Singapore and Penang, the former station being occupied all the year with the exception of a few days.

11. The general sanitary condition of the Colony, so far as the Municipalities of Singapore, Penang and Malacca are concerned, may be considered satisfactory. There has been no outbreak of Cholera in the last named place since 1893 when the water supply from Ayer Keroh was established.

The Sanitary Boards in the large villages of Penang and Province Wellesley do good work.

In Province Wellesley, on some estates, the coolies themselves in many instances appear to be to blame for their sickness, through neglect of sanitary precautions and through eating cheap or improper food.

Some alterations in the water supply to the coolies on Byram Estate have had a good result.

12. *Vaccination.*—The total number of vaccinations performed throughout the Colony during 1902 was 14,747 as against 12,548 in 1901, and of this number 12,684 or 86% were successful as against 11,483 or 92% in 1901.

The following table shows the numbers vaccinated, with the results in the several Settlements.

	Number of vaccinations performed.	Result.			
		Perfect.	Modified.	Failed.	Unknown.
Singapore ...	2,914	2,906	8	...	...
Penang and Dindings	3,227	2,675	274	183	95
Province Wellesley ...	4,001	3,573	150	264	14
Malacca ...	4,605	3,530	439	468	168

These numbers are exclusive of vaccinations performed by private practitioners, vaccinations of prisoners, immigrants or those who had been in contact with small-pox patients. Saigon pulp continues to be used, and, generally speaking, gives good results. I consider the bulk of the population is fairly protected, the numbers vaccinated last year exceeding the births. The majority of the cases of small-pox which do occur are amongst adults, and these as a rule are immigrants.

13. I was in charge of the Department from August to the end of the year, Dr. KERR, Principal Civil Medical Officer, having been invalided to Europe. Within three years the Colony has lost the services of two Principal Civil Medical Officers through ill-health, both men of wide and varied attainments. Dr. KERR was invalided home in August and the Department permanently lost his services in December. Such a kindly, able, energetic and zealous officer will be difficult to replace. Dr. M. F. SIMON retired in 1900 but did not live long to reap the benefit of his well-earned pension. His death took place suddenly on 17th July, 1902, in London, to the deep regret of his numerous friends.

14. I add as appendices to this Report, reports on:—

Appendix	A	Singapore Hospitals
"	B	Penang Hospitals
"	C	Province Wellesley Hospitals
"	D	Malacca Hospitals
"	E	Hospitals for women
"	F	Out-Door Dispensaries
"	G	Vaccination
"	H	Quarantine
"	I	Government Analyst's Department
"	J	Reformatory and Railway Coolies
"	K	Typhoid fever cases admitted to the General Hospital, Penang, during 1902, and notes and temperature charts of two cases of unclassified fevers by Dr. FREER.

and I append the following returns for Singapore, Penang, Province Wellesley, and Malacca:—

- (1) Statistics of population
- (2) Meteorological returns
- (3) Nosological returns.

J. LEASK, M.B.,  
*Acting Principal Civil Medical Officer, S. S.*

## APPENDIX A.

### Singapore.

#### General Hospital.

Report by Dr. LEASK, Colonial Surgeon Resident:—

1. *Buildings.*—

- (a) The quarters for Night Nurses to sleep in were taken over on the 31st December.
- (b) A shed with tanks for the Dhobies was made in the low ground in front of the European block in order that the noise of clothes beating might be removed from the near vicinity of the Officers' Wards and Nurses' Sleeping Quarters.
- (c) The night-soil shed was moved from near the Nurses' Sleeping Quarters to near the Mortuary.
- (d) The Nurses' kitchen in the European block was made mosquito proof.
- (e) Electric bells were fixed up in the Officers' Quarters.
- (f) The gap in the covered-way between the European and Female Hospitals was covered in.
- (g) The lighting of the Female Operating Room was improved by fixing glass panes in the back windows.
- (h) The unclimbable fence round the Native Wards was completed and a gate fixed.
- (i) Iron gates and gratings were fixed in the Native Wards, Bathroom and Latrine.
- (j) A mosquito tent was made for the Night Nurses in Native Ward I. and the five "Special Rooms" at the end of Native Ward II were converted into a mosquito proof Ward.
- (k) The back doors of the Servants' Quarters next the Sikh Temple were bricked up with honeycomb brickwork.
- (l) The left hand gate pillar at the New Bridge Road entrance was set back several feet.

2. *Grounds.*—The low ground in front of the European Hospital was drained to destroy the breeding grounds of the anopheles mosquito, the larvae of which had been found in the pools there.

This species of mosquito has been found in the European and Female Hospitals and in the House Surgeons' and Dressers' Quarters.

3. *The Gas Service* has been improved during the year by fixing new brackets and better burners and chimneys.

4. *The Water Supply* during the drought was kept up by the Municipal water carts. The Wards during this time could not, of course, be washed out as frequently as usual but beyond this no very great inconvenience was felt.

5. *Telephone communication* has been unsatisfactory during the year, the wires appearing to be in a chronic state of crossing.

6. *Staff.*—I have been in charge during the year. In August when Dr. KERR was unfortunately compelled to go on leave, Dr. ELLIS took over the work of the Native Wards.



7. No changes have been made in the House Surgeons, Drs. FRASER and FORD have done duty during the whole year, and their work has gone on smoothly in consequence.

8. The Dressers have worked well but three of them (R. H. RUFUS, R. M. NUNIS, and P. M. NUNIS) have had malarial attacks from time to time.

9. Apprentice Dresser BEINS resigned, and his place was filled on the 23rd November by Apprentice Dresser GEORGE RODRIGUES.

10. Three Nursing Probationers left during the year and were replaced by three others.

11. The Steward resigned and went to Europe in October. A satisfactory man was not obtainable and the Head Sister Miss BOTHWELL attended to the indoor part of his work until the end of the year.

12. There have been two changes in the Clerk's appointment. These were productive of considerable inconvenience at the time, but now the present holder, Mr. J. R. ANGUS, has made himself conversant with the work, and appears to have his time fully occupied. He has worked well.

13. The Bill Collector has worked well also.

14. The servants, with a few exceptions, have not been satisfactory. The work is exacting and distasteful, and there have been many changes. The increment in their wages in 1904 may improve matters.

Work done—See Table A-1.

15. The work has been heavier this year than it was in 1901; the average daily sick being 145.55 as against 117.29 in 1901.

16. A greater number of patients have been treated, the increase being in admissions to the European Wards.

17. The admissions of Natives and Native Police were less than in 1901.

18. There were 347 deaths, 83 of which were in a day after admission.

19. *European Wards*.—There were 682 admissions to the European Wards, 82 of these being females. European Policemen are included in the admissions.

20. The diseases causing the greatest number of admissions were:—

Intermittent Fever 76, Venereal diseases 74, Alcoholism 57, Dengue 30, Enteric Fever 25, Tuberculosis 23, Abscess and Debility each 16, Pneumonia 12, Tonsillitis 10, Abscess of Liver and Asthma each 7, Meningitis and Pleurisy each 5, Diphtheria 2.

21. Injuries were responsible for 39 admissions.

22. There were 7 cases of Small-pox, 4 of Cholera, and 1 of Chicken-pox treated in the Isolation Hospital.

23. Five Japanese patients were admitted for Beri-beri.

24. *Transfers*.—There were 4 transfers to the Lunatic Asylum, 1 to the Pauper Hospital and 3 to the Native Wards.

25. There were 46 deaths as against 49 in 1901, seven of them being females.

26. The chief causes of death were:—Tuberculosis 6, Enteric Fever, Pneumonia and Abscess of Liver each 4, Secondary Syphilis 3, Cholera, Dysentery, Malarial Cachexia, Myelitis, Meningitis and Heart disease each 2, Diphtheria, Intermittent Fever, Multiple Neuritis, Asthma, Bronchiectasis, Pleurisy, Empyema, Cirrhosis of Liver, Bright's disease and Suppurative Arthritis each 1.

27. *Native Wards* (not including Native Police Constables).—There were 2,571 admissions, of these 136 were females.

28. The diseases causing the greatest number of admissions were:—Intermittent Fever 367, Venereal diseases 145, Dysentery 142, Insanity 130, Enteric Fever 122, Beri-beri 111, Tuberculosis 95, Ulcers 70, Abscess and Bronchitis each 42, Dengue 35, Eczema 32, Pneumonia 30, Alcoholism 26, Purulent Ophthalmia 25, Remittent Fever 22, Scabies 20, Cellulitis 19, Colitis 18, Fistula in Ano 15, Rheumatism and Cirrhosis of Liver 14 each, Sprue and Bright's disease 12 each, Meningitis 10, Peritonitis 7, Carbuncle and Pleurisy each 5, Perityphlitis and Apoplexy each 4, Abscess of Liver 3.

29. Nine patients in the Native Wards developed Beri-beri while under treatment for other complaints.

30. Local Injuries caused 606 admissions and General Injuries 78.

31. *Transfers*.—148 patients were transferred—2 to European Wards, 120 to the Lunatic Asylum, 23 to Pauper Hospital and 3 to Quarantine Camp.

32. There were 298 deaths (15 of these being females) 24 more than in 1901. Enteric Fever accounts for this increase.

33. The chief causes of death were:—Beri-beri 50, Enteric Fever 41, Dysentery 39, Tuberculosis 30, Pneumonia 16, Meningitis 12, Cirrhosis of Liver and



Intermittent Fever each 8, Remittent Fever 7, Burns and Scalds 5, Peritonitis and Secondary Syphilis each 4, Abscess of Liver, Pleurisy and Injuries each 2.

34. Towards the beginning of the year I used the injection of Antitetanic Serum into the Spinal Canal by lumbar puncture in cases of Tetanus.

35. Under this treatment the tetanic spasms were stopped in one case, but the patient some time afterward became suddenly convulsed and died. In the second case all tetanic spasms ceased and the patient some days after became insane, was sent to the Asylum and was ultimately discharged from there recovered. The third case improved a little only, and died of the Tetanus.

36. Two cases of insanity following operation have come under my notice lately, and both occurred after Suprapubic cystotomy, one for stone in the bladder and one for enlarged prostate. The former died maniacal, the latter was sent to the Asylum and in the end recovered. In his case the mania was not so acute.

37. The number of Native private patients depositing money to defray Hospital expenses was 1,001 as against 850 in 1901.

38. *Native Police*.—There were 397 Native Policemen admitted, two less than in 1901.

39. The chief causes of admissions were:—Intermittent Fever 79, Observation 56, Venereal diseases 45, Dysentery 44, Injuries 25, Bronchitis 21, Abscess 12, Diarrhœa 9, Enteritis 8, Beri-beri, Pneumonia and Enteric Fever each 6, Rheumatism 4, Tuberculosis 3, Remittent Fever and Burns and Scalds 2 each, Apoplexy 1.

40. The 56 cases of "Observation" were Constables sent in for trivial complaints, or for the purpose of ascertaining whether they were malingering or not, and where no disease could be diagnosed.

41. In most cases the alleged complaint comes on shortly before the Constable is due for duty, and is usually headache, colic or indefinite pains.

42. There were 3 deaths, all in cases of Malays, 2 from Pneumonia and 1 from Apoplexy.

43. *Medico-legal Work*.—The cases sent in by the Police for examination or admission numbered 1,165 as against 1,179 in 1901—a decrease.

44. Dead bodies sent for *post mortem* examination by the Coroner numbered 187, as against 140 in 1901—an increase.

45. Since the appointment of a Deputy Public Prosecutor there has been much relief to the Staff in the matter of attendance at the Police Court.

46. Patients sent in for observation as to Insanity numbered 165 as against 114 in 1901. The examination and certification of these takes up a great deal of time.

47. *Operations*.—There were 139 Surgical Operations, requiring the administration of an anæsthetic, performed, (67 in the European Wards and 72 in the Native Wards) as against 101 in 1901.

48. Besides these numerous minor operations were performed.

#### The Police Force.

Report by Dr. W. G. ELLIS, Police Surgeon:—

1. The total number of the Force attending the out-patient room at the Central Station was 4,305. Many of these were in no way ill, but having neglected going on duty they were trying to escape punishment by malingering. Thirty-nine of the most inveterate of these were sent to the General Hospital for observation, and having shewn no signs of any illness were reported and punished.

2. The greatest number of patients seen on any one day was 39, the lowest 2.

3. Table A-2 gives the average daily number attending month by month for the past four years.

4. Of the out-patients seen, 350 were sent to Hospital as in-patients, compared with 294 sent to Hospital in 1901, 290 in 1900, and 556 in 1899.

5. Table A-3 shews the diseases of those sent to Hospital.

6. The health of the Police Force on the whole has been good, but few have had to be boarded out for chronic affections and there has been no epidemic disease. Nearly all those sent to Hospital have recovered, the fever cases with but few exceptions being of the benign tertian type and recovering rapidly under treatment. There have only been two cases of malignant tertian, formerly so common amongst the Police inhabiting the Bukit Timah Station. The removal of nearly all the Indian coolies, who in 1901 were working on the new railway line adjoining the Station, has probably also removed the source of infection.

7. Three hundred and ninety four (394) candidates for the Force were examined



during the year. Of these, 270 were passed as fit and 124 rejected. The causes for rejection were as follows:—Ill development 52, over age 18, incipient phthisis 6, heart disease 10, venereal diseases 18, defective vision 8, enlarged spleen 2, beri-beri 1, hernia 2, deformities 7. The nationalities of these were:—8 Europeans passed and 1 rejected, 1 Eurasian passed and 1 rejected, 36 Chinese passed and 11 rejected, 39 Sikhs passed and 18 rejected, and 186 Malays and Indians passed and 93 rejected. Five Sikhs were examined for re-engagement, of whom 3 were passed and 2 refused.

8. The sanitary condition of the Stations is generally satisfactory though some of those in town are overcrowded and in need of improvements to ventilation. Details of suggestions are contained in my book "Report on Stations".

9. In nearly every Station throughout the island are to be found unvaccinated children belonging to married members of the Force. I have often reported on this matter and consider that more care should be exercised in seeing that all are vaccinated.

#### Prison Hospital.

Report by Dr. W. G. ELLIS, Acting Colonial Surgeon in charge:—

1. The sanitary condition of the Prison has been good.

2. Improvements in the details of the removal of the night-soil are urgently needed. At present all buckets are emptied into one large tank from which the removal carts are filled by bucketing daily, this tank is never properly emptied. During this operation, usually lasting over an hour, a considerable stench is carried by the wind throughout the lower levels of the Prison, and is often noticeable in the public roads in the neighbourhood. This amounts to a nuisance and should be abated without delay.

3. Several structural improvements have been carried out during the year:—

(a) The removal of the walls separating the hospital wards, allowing more light and air to enter.

(b) The tops of the partition walls of the stone-breaking cells in the lower and short sentence work-yards have been removed, allowing a free current of air to pass through from end to end.

(c) Some of the walls of the wheel house have been pulled down, giving better ventilation.

(d) The work of substituting brick for corrugated iron partitions in C block is still being carried on. Where finished it has largely diminished the plague of vermin so prevalent in the old form of cell.

4. In May the prisoners from the Civil Prison were removed to the new Prison on the top of the hill at the back of the Criminal Prison. The new buildings are a great improvement upon the old, more especially as to the site, light, and ventilation.

5. The old Civil Prison has been converted into godowns for the printing and store-keeper's department. A portion of it has been used during the latter part of the year as a receiving block, it having seemed to me advisable on account of some cholera in the town, to observe recent admissions for a day or so before passing them on to mix with the other prisoners. Part of the upstairs accommodation here has been used during the last three months as sleeping dormitories for beri-beri patients, there being room in the Hospital for only those most seriously ill.

6. The health of the prisoners has been unsatisfactory. The average daily sick in Hospital was 74.57 as compared with 58.06 in 1901. This does not include the daily attendance of numbers of prisoners as out-patients.

7. There has also been a considerable amount of sickness amongst the Warders and their families. Several cases of Enteric, Dengue, and Mumps were treated in the quarters. Some recent improvements to the drains round the quarters will I hope stamp out Enteric.

8. *Work done in Hospital.*—There were 53 patients remaining on 31st December, 1901, and 1,406 admitted during the year, the total number treated 1,459. The number discharged recovered was 1,358, died 38 and remaining on 31st December, 1902, 63.

9. *Releases on Medical Recommendation.*—One only in the case of an Upper Grade prisoner suffering from Chronic Dysentery.

10. *Transfer to Leper Asylum.*—Four prisoners, two Short Sentence, one Revenue Grade, and one Lower Grade, all admitted to prison suffering from the disease, were transferred to Pulau Jerejak.

11. One prisoner developing insanity whilst undergoing sentence was transferred to the Lunatic Asylum.



12. *Judicial hangings*.—Five prisoners condemned to death for murder suffered the extreme penalty. Death was instantaneous in every case.

13. A prisoner, sentenced to be detained during His Majesty's pleasure, has shown no symptoms of insanity since admission.

14. *Admissions*.—Of 3,035 prisoners admitted to the Prison during the year, 1,177 showed evidence of past or present venereal disease.

15. One thousand four hundred and six patients were admitted to the Hospital compared with 935 admitted in 1901—an increase of 471.

16. The diseases causing the largest numbers of admissions were:—Beri-beri 415, Fevers 188, Diarrhœa 186, Dysentery 156, and Minor injuries 87.

17. Dysentery shows an enormous increase over the previous year, 156 cases with 15 deaths as compared with 58 cases and 3 deaths in 1901. Up to the end of June 40 cases with 4 deaths occurred. Early in the second half of the year there was a drought of several months' duration during which the water supply to the Prison was intermittent and deficient and some old wells had to be opened up. Epidemic dysentery at once started and we were flooded with cases. Notwithstanding the boiling of all drinking water and other precautions taken for the stamping out of the disease, the epidemic, though considerably lessened, did not cease until the break up of the drought early in November.

18. *Beri-beri*.—In spite of the many measures taken to combat this disease there have occurred more cases during the year under report than in any of the last five years. Since the commencement of the outbreak there were in 1897 3 admissions and no deaths; in 1898, 124 admissions and 1 death; in 1899, 165 admissions and 2 deaths; in 1900, 224 admissions and 28 deaths; in 1901, 219 admissions and 9 deaths, and in 1902, 415 admissions and 11 deaths.

19. Table A-4 shows the number of cases occurring in each month.

20. The nationalities of those admitted were Chinese 405, Malays 7 and Indians 3, distributed as follows:—Lower Grade 102, Middle Grade 129, Short Sentence 136, Upper Grade 19, Revenue Grade 19 and Civil Prisoners 10.

21. Fifty-nine beri-beri patients have from time to time during the year been transferred to the Prison at Malacca for change of air.

22. At first these patients did well and made excellent recoveries, but latterly the results have not been so good. This, I think, is what was only to be expected, the Malacca Prison doubtless being now infected. In my opinion, if the statistics of the Beri-beri Hospital at Pasir Panjang attached to the Lunatic Asylum are as good for 1903 as they have been in 1902, then the building of a Beri-beri Hospital near the same site for prisoners should be favourably considered. A hospital on such a site can, with care, be kept from being saturated with the beri-beri poison.

23. It is to be noted that only 3 Indians were attacked during the year with the disease out of about an average daily number of that race in the Prison of 70. Of these, one had been in residence in the Prison over a year, one just over 5 months and one only one month and two days at the outbreak of the disease.

#### Zymotic Diseases.

24. *Enteric*.—One case occurred in a Short Sentence prisoner. This man was admitted to Prison on 21st November, 1901, and to Hospital on 28th January, 1902. He evidently contracted the disease in Prison, but I have not been able to discover the source of infection. He made a good recovery.

25. *Dengue*.—Though epidemic in town but 7 cases occurred in the Prison.

26. *Mumps*.—There were 2 cases.

27. *Deaths*.—There were 38 in Hospital against 33 in 1901. Besides these, three others occurred in the Prison.

(1) A Chinese remand prisoner died suddenly in the Civil Prison and death was found to be due to rupture of an enlarged spleen. Cause of rupture unknown.

(2) Short Sentence 134 was found dead in his cell in the block. Death was due to old standing heart disease.

(3) Short Sentence 129 was also found dead in his cell. He was an old and feeble man under observation following admission. Death was due to Syncope.

28. The Hospital Staff have worked well throughout an abnormally busy year.

29. Dr. LEASK was in charge from 1st January to 5th August, and I then took over charge until the end of the year.

#### Tan Tock Seng's Hospital.

Report by Dr. R. DANE, Colonial Surgeon:—

1. *Buildings*.—The ordinary half yearly services were performed.



2. *Cases treated*.—The total number treated was 7,090 and the number of deaths was 1,583 giving a death-rate of 22.32.

3. Table A-5 shows the percentage of deaths from some diseases during the past few years.

4. *Fever cases*.—I hoped to be able to make a large number of observations and obtain a fair idea of the proportion of Malaria and Non-malarial cases now somewhat loosely grouped under the heads of Fever, Malarial Fever and Febricula; but unfortunately other work intervened and I was only able to make notes of any value of 52 cases. I have not counted cases in which only appearances of very young parasites were visible.

Of the 52, in 33 I discovered parasites and in 19 no parasites. Of the 33 which contained parasites, 9 contained crescents and 24 contained fully or half grown pigmented parasites. Of the 19 in which no parasites were found, in 6 typhoid was proved by *post mortem* examination. In 4 the fever was short and mild and the patient got well in a few days. I consider them to have been "Febricula". In 3, I made no diagnosis and in 5, Malaria was diagnosed by subsequent clinical signs.

Nine hundred and seventy-nine patients were admitted for Febricula, Fever, Malarial and Enteric and any analysis of only 52 of these must leave much too large a margin of error to allow it to be accepted as indicating the relative proportion of different diseases, *e. g.*, the percentage of Typhoid cases would, I consider, be much too high.

A large number of our fever cases are imported, for, of the 33 in whom parasites were found, 12 had been less than 20 days in the Colony, and of these 12, 5 came from the mainland, 5 from adjacent islands and 2 from China.

#### Quarantine Camp.

1. *Small-pox*.—One hundred and ten cases were admitted.

On three occasions I vaccinated friends of patients who had been exposed to infection. In all the vaccination took and all acquired small-pox, but the latter disease was milder in degree and quicker in its course than it would otherwise have been. None of them had ever been vaccinated before, not even in infancy, nor had they had small-pox.

2. *Cholera*.—Three-hundred and twenty-two cases occurred during the year, 250 of them in April and May and the rest pretty equally throughout the year.

(a) *Treatment*.—I was much impressed by the apparent beneficial effect of Eucalyptus Oil ("Practitioner" March 1901) which I used both at this Quarantine Camp and at the Quarantine Station at St. John's Island. Better results may be expected when attendants are replaced by trained Nurses.

(b) *Diagnosis*.—For the early recognition of doubtful cases, I found the cultivation in peptone water (Schottaluis' method) most useful, enabling me to give a positive opinion in less than 24 hours. I used it for 47 cases and it often succeeded when the ordinary search for the comma bacillus gave doubtful or negative results. These 47 cases were all in the first 100 patients sent into the Camp at Ballestier. After that, there was no time for bacteriological diagnosis.

3. *Plague*.—Two cases were sent, and two corpses were sent for diagnosis as to the cause of death. All were fully verified by bacteriological examination.

#### Leper Hospital.

The total number of inmates was 99 (74 males and 25 females). Of these 23 died 12 absconded, 4 were discharged and 28 transferred to Pulau Jerejak. Average daily number 36.7. In 1900, the old wards were burned down, and the inmates temporarily housed in attap wards. During 1902, the new permanent wards were completed.

#### Lunatic Asylum.

With the exception of the Beri-beri Table, the Tables appended to this report are some of those recommended by the English Commissioners in Lunacy and are numbered accordingly.

Report by Dr. WILLIAM GILMORE ELLIS, Medical Superintendent:—

1. The average daily number of patients resident during the year was 174 (males 130, females 44), an increase of 12 males and a decrease of 2 females as compared with the previous year.

2. On 31st December, 1901, there remained 172 patients (males 127, females 45). There were admitted in 1902:—Males 143, females 16, making the total treated 270 males and 61 females. The maximum and minimum numbers in the Asylum on any one day of the year were respectively 185 and 157.



3. Of the 179 patients (males 133, females 46) remaining on the 31st December, 1902, 88 males and 29 females were admitted from Singapore; 29 males and 14 females from Penang, 6 males and 2 females from Malacca and 3 males from Sandakan.

4. There were 4 lunatic criminals and one criminal lunatic under treatment on 31st December, 1901; 18 lunatic criminals were admitted during the year, making a total of 23 criminals treated. Of these, 8 were discharged recovered, three died, one was discharged improved to care of friends, and 11 lunatic criminals and one criminal lunatic remain under treatment.

5. From the commencement of the year under report, a Coroner's inquest as ordered under the new Criminal Procedure Code, has been held upon all patients dying in the Asylum. In all cases verdicts of death from natural causes have been returned by the Juries.

6. As in previous years, a large percentage of our admissions showed evident signs of past or present venereal disease. 23.2 per cent. have suffered from Syphilis compared with 13.48 per cent. of the admissions for 1896, 16.14 for 1898, 13.85 for 1899, and 20.57 for 1901. In many of these cases the Syphilis was the undoubted cause of the insanity, but it must not be overlooked that Syphilis may co-exist with any form of insanity and have nothing to do with it as a causative element.

7. A small epidemic of cholera broke out in November, attacking one attendant and 9 patients. Of these, the attendant and 5 patients recovered and 4 patients died. The disease was introduced from the town where a few cases were occurring, breaking out in a patient the night following admission. The patients were treated in sheds outside the walls and a further and large shed was erected for the dirty and demented patients. The outbreak ceased in under three weeks. Two sporadic and fatal cases occurred early in the year at the Pasir Panjang Hospital.

8. Beri-beri has remained endemic in the Lunatic Asylum at Sepoy Lines throughout the year. There have been 99 new cases as compared with 102 in 1901. Though there has been but a slight reduction in the cases occurring, there has been an enormous fall in the death-rate from this disease, a death-rate that was 28.30 calculated on the average number resident in 1900, 9.15 in 1901, and but 2.3 in the year under report. This success is, I believe, due to the beneficial results of treatment in the Beri-beri Wards situated on the seaside at Pasir Panjang; but four deaths occurred from Beri-beri in 1902 and not one of these patients could be sent to Pasir Panjang as they occurred during the outbreak of cholera when I was averse to transferring any patients from an infected to a non-infected Hospital and so they failed to obtain the necessary treatment. As to the cause of the disease, I regret being unable to report any progress. I am convinced and have been for many years that the consumption of mouldy, microbic or otherwise diseased rice is not the cause. Thirteen years ago I separated 20 healthy native patients on admission in two cottage blocks giving them European food and no rice whatever. At that time Beri-beri was very prevalent amongst the natives (we have never had any cases in Europeans or Eurasians) and I wondered if in any way the food was in fault. My experiment had to be given up in less than six months as by then more than half the 20 cases had shown symptoms, more or less of Beri-beri. The opinion I then came to was that Beri-beri was a place disease, that the soil and buildings were infected, that patients inhabiting them were liable to absorb the poison whatever it was, that this poison absorbed in sufficient quantities was the cause of Beri-beri, and this opinion I have never seen reason to change. From that date disinfection has largely been relied on to combat the disease and I can only regret that the more thorough manner in which we now try to carry it out was not adopted earlier.

The patients at Pasir Panjang bathe in the sea always once and sometimes twice a day for half an hour at a time and during the time they are in the water they are massaged. Their clothing is changed twice a week, and prior to washing is soaked in 1-2000 perchloride of mercury for an hour. Blankets are soaked in the same solution weekly. All bed boards remain in the sea during a tide once a week and are then swilled in perchloride prior to drying. All floors, verandahs, rails, and walls are thoroughly washed with sea water twice a week and then sluiced over with the perchloride. Once in from a week to ten days the sand of the compound above high water mark, and of the paths, etc., is scraped up to the depth of one to two inches and carried in baskets below high water level to remain a tide before being replaced. A sunny day is invariably chosen for this work. The diet is the same as for the patients at Sepoy Lines, tea only being used for drinking purposes. All cooking utensils, plates, mugs, etc., are washed twice a week in perchloride and then rinsed in boiled water before drying.



To which if any of these precautions our success up to the present is due I cannot say, but the fact remains that the death-rate has marvellously decreased.

Beri-beri Table A-6 gives the complete figures of the disease as occurring in the Asylum during the past year.

9. A new Ward is to be built early in 1903 at Pasir Panjang for males and when completed there will be accommodation for 60 men and 50 women.

10. *Admissions*.—143 males and 16 females were admitted during the year; 116 males and 13 females from Singapore, 20 males and 2 females from Penang, 6 males and one female from Malacca and one male from Sandakan.

11. Table XI gives their form of mental disorder.

12. The physical condition of those admitted was as follows:—1 male “dying,” 16 males and 3 females “greatly impaired,” 55 males and 5 females “impaired,” 51 males and 5 females “fair” and 20 males and 3 females “good.”

Eleven males and one female died within one month of admission. 20 patients were diagnosed as suffering from Phthisis on admission.

13. Table VI shews the length of residence of those dying and of those discharged recovered during the year.

14. *Discharges*.—90 patients (82 males and 8 females) were discharged recovered equal to a recovery rate of 56.60 calculated on the admissions. This is the highest rate we have ever had and compares favourably with that for English Asylums.

15. Eleven males and one female were discharged improved, and one male and one female not improved to the care of their friends.

16. *Deaths*.—38 males and 4 females died during the year. The percentage of deaths was 24.14 calculated upon the average number resident and is the lowest we have had for 10 years.

17. Table V shews the causes of deaths together with the ages at death.

18. Twenty-one *post mortem* examinations were made and the results duly recorded.

19. Table XIII shows the nationalities of those remaining in the Asylum.

20. *Industries*.—During the year there have been made, 2,318 yards of cloth, 80 canvas rugs, 8 suits canvas combinations, 36 trousers for Europeans, 460 trousers for Natives, 58 jackets for Europeans, 399 jackets for Natives, 7 skirts, 235 bajus and 131 sarongs.

21. The income from paying patients was \$2,339.99 and from sales of articles \$53.64.

22. The whole staff have worked well throughout the year and I have nothing but praise for the manner in which all behaved when we were threatened with a serious outbreak of cholera.

#### Maternity Hospital.

Report by Mr. C. V. NORRIS, Assistant Surgeon in charge:—

1. Dr. FOWLIE was appointed Honorary Visiting Surgeon in March in place of Dr. DE STURLER resigned.

2. The lath and plaster ceilings of three of the wards were removed and wood substituted.

3. There were 74 admissions during the year, the total treated being 76, all of whom were discharged before the end of the year.

4. Of the 67 labours in Hospital, 61 terminated naturally, 3 were tedious, forceps being applied in all the three cases, one shoulder presentation version resorted to and 2 abortions.

5. There were 4 still-births and one died within 2 hours after birth.

6. The fees amounted to \$980.25.

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#### APPENDIX B.

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##### Penang.

Report by Dr. G. D. FREER, Acting Colonial Surgeon:—

1. The public health of the Island for 1902 was below the average. The death-rate was higher than usual and zymotic diseases were unusually prevalent.

2. The total number of deaths registered was 5,787, as compared with 5,260 for the previous year; of these 4,510 were registered within Municipal Limits and 1,277 in the Country Districts. On an estimated population of 129,462, this gives a crude mortality of 44·70 per mille. Eliminating the deaths at Pulau Jerejak, 99, (Leper Asylum 73, Quarantine Station 26), and of those dying shortly after arrival in the Colony, 415; (Town 399, Country 16), the corrected death-rate for the whole Island comes to 40·73 per mille; 43·09 per mille for the population within Municipal Limits, and 34·10 per mille for the Country.

3. Many causes may be assigned as contributing to the high death-rate, but the chief factor of all is immigration. A reference to the report on Quarantine for the year will shew that the total number of deck-passengers inspected on arrival alone far exceeded the total population of Penang, and the number inspected does not by any means represent the whole number arriving. Penang, like Singapore, is a great distributing centre of immigration for the Straits and adjacent countries; it acts the part indeed of a gigantic sieve, retaining for the most part those immigrants who are too infirm to proceed further. If those countries from which immigration is chiefly drawn have had the misfortune to have been afflicted with pestilence, famine, or war, then the number of immigrants arriving here broken down in health is increased and our death-rate is eventually abnormally raised. As the immigrants are for the most part adults, one is not astonished to find that nearly half the deaths here are among adults from 26 to 45 years of age. It naturally follows also that, as the greatest amount of immigration is from China, the death-rate for Chinese here is far higher than that for other Nationalities, the next on the list being Tamils.

4. The prevalence of zymotic disease contributed in a minor degree to raise the death-rate. The following are the statistics:—

*Small-pox.*—There were 314 cases reported (Town 251, Country 53, imported 10) and 91 deaths, including 34 either found dead or reported after death. The chief class to suffer were adult Klings who in most cases were found not to have been vaccinated in India during childhood. One hundred and ninety-six (196) cases were treated in the Quarantine Camp, and seven Europeans (5 imported) in the European Small-pox Hospital.

*Cholera.*—There were 51 cases and 32 deaths. No fewer than 46 of the cases were imported, 42 of them being passengers landed at the Quarantine Station.

*Typhoid Fever.*—This disease appears to have been unusually prevalent all over the east this year. Eighty-eight (88) cases were reported in Penang. In the appendix will be found further particulars of those admitted to the General Hospital.

*Dengue.*—This disease, which reached Penang from China and Singapore towards the end of 1901, assumed epidemic proportions during the first few months of the year, and one or two cases were reported as late as September. No deaths were reported as directly due to dengue, but an observation by Dr. MANSON that the general mortality rises during a visitation of this disease certainly held good, his explanation being that, although in itself a benign disease, it may become a public danger by lowering the resistive powers of those attacked and so predispose to other and more dangerous diseases.

*Chicken-pox and Measles.*—Seventy-seven (77) cases of the former, and 21 of the latter disease were reported.

*Bubonic Plague.*—No cases were reported. The number of rats destroyed for which a reward was paid by the Municipality was 131,395.

The chart accompanying this report (Table B i) shows graphically the actual number of deaths each week compared with the corresponding weeks of the previous year, and also the rainfall for the same periods. It will be seen from it that the second quarter was as usual the one in which the mortality was highest. In commenting on the same fact in the report for 1899, Dr. KERR described it as a period of comparative wet following a hot and dry one, and considered the rise of sub-soil water in a soil which had become filth sodden during the dry weather to have a large influence on the public health. Another point mentioned in the Appendix to the Report for 1901 was that, with the occurrence of regular rains towards the end of March and during April, *Anopheles* mosquitoes were noted as being more abundant than at any other time.

#### Quarantine Camp.

Report by Dr. G. D. FREER, Acting Colonial Surgeon:—

1. There were 316 admissions during the year for the following diseases:—  
Small-pox 196, Chicken-pox 64, Measles 18, Acute Diarrhœa 13, Cholera 5, Choleraic Diarrhœa 4, Remittent Fever 3, Chronic Dysentery 2, Observation 5, &c.



2. One hundred and twenty-five of the total admitted either came themselves or were voluntarily brought to the Camp by relations or friends. The deaths numbered 59, giving a percentage of 18.55 to total treated. The greatest number of patients in the Camp at any one time was 67.

3. With regard to Small-pox which constituted the bulk of admissions 196, 63 bore marks of previous vaccination and 133 were unvaccinated; only one of the former and a doubtful case of vaccination died while 58 or 43% of the latter proved fatal.

4. During the year 1902, 196 cases were admitted, of which 140 were Klings, 24 Chinese, 31 Malays, 1 Javanese, 3 Siamese, 2 Eurasians, 2 Achinese, and 3 Bengalis.

5. The age incidence for Small-pox was as follows:—Up to 10 years 34, from 10 to 20 years 46 and over 20 years 116.

6. From the above it will be seen that the large majority of the Small-pox cases were Kling adults who in most cases had not been vaccinated in India before coming to the Straits. More than half the cases occurred in February, March and April. The Kling festival or Taipusam is held about the beginning of the year and it is always shortly after the time that the number of Small-pox cases shew a large increase. In the case of the Malays, enquiry elicited the fact that many of them had been born in Kedah and so escaped vaccination during infancy.

7. The five cases of cholera occurred in June and November, 3 being from the Indian Immigration Dépôt, one from Noordin Street, also a new arrival from India and one Chinese sinkeh from China. Four of these ended fatally within 24 hours.

8. No important alterations were made to the existing buildings during the year.

#### General Hospital.

Report by Dr. G. D. FREER, Colonial Surgeon Resident:—

1. *Buildings*.—The extension to the Native Ward was completed and provides ten extra beds upstairs for fever cases and ten below on a concrete floor for the use of dysentery, typhoid and observation cases. The whole of the extension was made mosquito proof. Additions were also made to the latrine and bath-room accommodation of the Native Wards.

2. *Staff*.—Dr. FRY was in charge until he went on leave on 20th September, 1902. After this Dr. JAMIESON acted until 27th December when Dr. MUGLISON returned and I once more resumed charge of the Hospitals. As the Nursing Sisters are shortly to be replaced by trained Nurses from Home, I think it will not be out of place to put on record here how much their services and especially those of Sister St. APOLLINE, the Head Sister, have been appreciated during the many years of hard work they have devoted to the Hospital.

3. *Work done*.—Tables B-2 and B-3 shew the number of admissions and deaths for the past five years and more detailed information for the year under review.

4. Among Europeans, the chief diseases treated were Malarial fever 35, Venereal disease 26, Diarrhoea 5, Dysentery 2, Dyspepsia 10, and Typhoid fever 14.

5. The chief diseases among Natives (excluding Police) were Malarial fever 132, injuries 308, Venereal diseases 48, Conjunctivities 87, Beri-beri 25, Bowel complaints 58, Typhoid fever 16.

6. A special report on the typhoid fever cases is added in the appendix K.

7. The principal operations performed included removal of tumour by incision 4, Ligature of Femoral artery 1, Wiring of fractured patella 1, Laparotomy for abdominal injuries 4, (with 3 deaths), Inguinal colotomy for malignant disease of rectum 1 (died). For strangulated hernia 2, (died). For abscess liver 4 (with 1 death), supra pubic lithotomy 2, Radical cure hernia 1.

8. One hundred and fifty-six Sinkehs were admitted. The number of ophthalmia cases sent up was so great in August and September that a special Ward had to be set aside for them in the Pauper Hospital.

9. Sixty-five cases were sent for observation, of whom 12 were transferred to the Lunatic Asylum, Singapore.

10. *Native Police*.—The number of admissions was 576 as compared with 554 for the previous year and made up as under:—

Malays 230, Sikhs 320, Hindus and other nationalities 26.

11. Malarial Fever formed the bulk of admissions, but the number was considerably less than for the previous year, being only 146 against 233 for 1901. The other complaints were chiefly ulcers, venereal diseases, dyspepsia, boot bite and minor injuries.

12. There were 7 deaths in all :—2 Malays, 4 Sikhs, and 1 Kling.
13. Of the 320 Sikh Police admissions, 70 were for malarial fever, 51 for dyspepsia, 25 for anæmia, 25 for diarrhœa, 23 for bronchitis and asthma, 22 for venereal disease and rheumatism and the rest for minor complaints.
14. Many of the cases put down as dyspepsia were suffering from diarrhœa, anæmia and sore mouths in addition, a condition very similar to sprue and intractable to treatment. Samples of flour used by these men were sent up for examination and found to be of inferior quality. Since a stricter supervision of their dietary has been instituted the number of admissions for these causes has diminished.
15. One hundred and eighty-four Recruits were examined, of whom 62 were rejected and 122 passed.
16. Boarded as unfit for further service 14 Sikhs and 2 Malays.
17. *Medico legal*.—Twenty-four exhibits were sent by the Police for examination and report as to blood stain, &c. Forty-four bodies were sent for *Post mortem* examination and inquest.

#### Prison Hospital.

Report by Dr. T. C. MUGLISTON, Colonial Surgeon :—

1. During the year there were 3,534 admissions into Prison as against 2,837 for 1901, the average daily prison population being 295·61.
2. The admissions to Hospital excluding those detained under 48 hours for trivial complaints or observation, numbered 103, giving an average daily sick of 4·75 and a daily sick rate of 1·60% of the Prison strength.
3. There were 15 deaths in the Prison during the year (not including one Judicial hanging) which is equivalent to a mortality of 14·56% of those admitted to Hospital, 42·4 per mille of the admissions to Prison and 50·74 per mille of the average daily strength.
4. The 15 deaths were due to the following causes :—  
Cholera 4, Dysentery 1, Remittent fever 1, Pneumonia 1, Tubercular Phthisis 1, Chronic Diarrhœa 5, Chronic Bright's Disease 2.
5. Of the total admissions to the Prison, 386 bore traces of actually suffering from venereal disease, 49 prisoners showed the marks of a course of morphia injection and 22 were confirmed opium smokers.
6. Vaccination was performed on 451 prisoners who had not been previously vaccinated. Saigon lymph was used and gave a percentage of successful cases of 78·93.

#### Pauper Hospital.

Report by Dr. G. D. FREER, Colonial Surgeon in charge :—

1. *Buildings*.—The whole of the Hospital buildings have been painted externally during the year, except the female and Leper Wards, by the servants of the Hospital, with materials supplied by the Public Works Department.
2. *Work done*.—Three hundred and nineteen male patients remained in hospital from the previous year, and these with 3,531 admitted during 1902, make a total of 3,850, as compared with 4,175 in 1901.
3. In the female Wards, 23 patients remained in December, 1901, and 182 were admitted during the year, making a total of 205 compared with 240 in 1901.
4. The average daily sick was 351·02, the total number of deaths 814, and the percentage of deaths to total treated 20·07, including 107 patients who died within 24 hours from the time of admission.
5. Table B-4 shews the admissions and deaths from the principal diseases for the past four years.
6. *Beri-beri*.—The number of cases admitted was 314 with 121 deaths compared with 360 admissions and 134 deaths in 1901. The average stay in Hospital being 53·13 and 34·16 days respectively.
7. The experiment begun by Dr. FRY last year on my suggestion of putting half of the Beri-beri admissions on Kling and the other half on Chinese rice was continued throughout the year and the following shews the results :—

	<i>Admissions</i>	<i>Deaths</i>	<i>P. C.</i>
Patients fed on Kling rice	164	61	30·96
Do. Ordinary diet	150	60	32·43
The number of Beri-Beri cases who died within 24 hours of admission was 22.			



8. Table B-5 shews the admissions and deaths of different nationalities for Beri-beri together with the rainfall for each month of the year.

9. Sixty-five lepers were admitted during the year of whom 33 males were transferred to Pulau Jerejak and 6 females to the Female Leper Ward.

#### Balik Pulau Hospital.

Report by Dr. G. D. FREER, Colonial Surgeon in charge:—

1. *Buildings and Grounds.*—The roofs of the various buildings have been re-ataped, and a few minor repairs to woodwork have been carried out.

The Hospital Grounds have been well kept.

2. *Staff.*—There have been no changes in the staff this year.

3. *Work done.*—37 cases remained in hospital from the previous year, and 496 cases were admitted during the year, making a total of 533 cases treated in all. The average daily sick was 39.95, and the number of deaths during the year was 44, giving a death-rate of 8.25 per cent.

4. The chief disease treated were:—Ulcers 123, Phagedœna 20, Venereal disease 75, Debility 18, Intermittent fever 85, Tubercular Phthisis 14, Diarrhœa 32, Anæmia 9, Rheumatism 29.

5. *Out-Door Dispensary.*—Four hundred and fifty-two patients attended the out-door dispensary during the year, as against 511 in the previous year.

6. The following gives a statement of the work done during the year:—

Number of patients 452, number of visits 766, number of Government servants 107, number of paying patients 233, number of Indigent patients 112, Average number of visits per diem 209, number of males 396, number of females 56, Receipts for the year \$30.60.

7. The chief diseases treated comprised:—

Fever and ague 135, skin diseases including Ulcers 90, Rheumatism 43, Bronchitis 25, Constipation 17, Colic 17, Venereal diseases 22, Diarrhœa 12, Injuries 22.

8. *Public Health.*—The health of the district has been fairly good. There were 23 cases of small-pox reported during the year with 2 deaths. The cases were chiefly confined to one locality Teluk Kumbar.

9. *Medico Legal.*—There were four deaths on which inquests were held. Three were accidental and one suicidal.

#### Leper Asylum, Pulau Jerejak.

Report by Dr. FREER, Acting Colonial Surgeon:—

1. *Statistics.*—The total number treated was 352 as against 342 in 1901, made up as follows:—Remaining on 31st December, 1901, 235 (Colonial 176 and Perak 59) admitted during 1902, 117 (Colonial 84 and Perak 33). The number of deaths was 73 and the percentage of deaths to total treated 20.73 as against 88 and 25.73 per cent. respectively in 1901. The percentage of deaths was the lowest since 1893 when it was 20.13 per cent.

2. Out of the 117 admissions, the disease appeared to be chiefly "Nodular" in 29, "Anæsthetic" in 39, and to belong to the mixed form in 49 cases.

3. Table B-6 gives the admissions and deaths at the Leper Asylum since 1890 and it will be seen that the number of Colonial admissions shews a distinct falling off during the last few years.

4. The additions and alterations carried out by the Public Works Department were numerous and important, the chief being:—

(a) Replacing with concrete the Malacca tiled floors of Ward 7 and adjacent covered ways and outhouses.

(b) Erection of a sea-wall.

(c) Completion of new Servants' Quarters.

(d) Two additional Quarters for Dressers.

(e) Construction in 5 of the Dressers' Quarters of a mosquito-proof room and the addition of an up-stairs verandah to all the Quarters.

(f) Cementing of main drain and of the new drain from Ward 7 to the sea.

5. The health of the staff has been good, shewing a decided improvement over previous years.

### Lumut Hospital.

Report by Dr. FREER, Acting Colonial Surgeon:—

1. *Buildings*.—A new infectious Ward was erected during the year to replace the old Ward.

2. *Work done*.—One hundred and sixteen cases were admitted during the year, this with 5 remaining from the previous year makes a total of 121 cases treated which is 148 less than the previous year. The admissions were chiefly for Malarial Fever (36), Diseases of the Digestive System (16), Diseases of skin (14), Injuries (13). The average daily sick was 3·71 as compared with 8·38 for 1901 and 5·56 for 1900.

3. *Mortality*.—There were ten deaths during the year including those who were moribund on admission, giving a percentage of deaths to total treated of 8·26. The causes of death in the 10 fatal cases were as follows:—Beri-beri 3, Remittent Fever 3, Diarrhœa 2, Anæmia 1, Cirrhosis Liver 1.

4. *Out-Door Dispensary*.—Four hundred and eighty-six were treated during the year, against 747 the previous year, a decrease of 261. The fees collected amounted to \$13·55.

5. *Vaccination*.—One hundred and twenty-four children were vaccinated during the year with ten failures.

6. The general health of the District during the year 1902 cannot be said to have been good. Table B-7 will shew that there were more deaths reported this year than in previous years.

7. One imported case of modified small-pox was reported in Pangkor on the 2nd May, 1902.

8. The health of the Police, who are now all Malays, has been very good. The administration to each of them of 10 grains of quinine on two successive days a week was continued. There were only 13 admissions to hospital during the year for the following causes:—Intermittent Fever (11), Ulcer (1), Venereal Disease (1).

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### APPENDIX C.

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Report on the District and Estate Hospitals, Province Wellesley and on the health of the Province by Dr. A. H. KEUN, Colonial Surgeon, Province Wellesley, South:—

1. The population of Province Wellesley is estimated at 116,267 for 1902, as against 115,461 in 1901.

2. There have been 3,698 births and 3,476 deaths as against 3,654 and 3,542 respectively in 1901. This gives a birth-rate of 32·02 per mille and a death-rate of 30·09, as against 31·70 and 30·72 respectively in 1901 and 35·51 and 32·77 in 1900.

3. The population is composed as follows:—Europeans 168, Eurasians 299, Malays 69,830, Chinese 25,626, Tamils 18,656, Other Nationalities 908.

This shews an increase of 3 Europeans, 6 Eurasians, and 982 Malays on the population of 1901 and a decrease of 382 Chinese, 378 Tamils and 8 of Other Nationalities.

The increase in the European, Eurasian and Malay population is due to the excess of births over deaths.

The decrease in Chinese is explained by the emigration of those into Kedah and the decrease in Tamils by the decrease of immigration to the Estates.

#### Northern and Central Divisions, Province Wellesley.

1. During the early part of the year, Dr. SHEPPARD was in charge of the Northern and Central Divisions of Province Wellesley. On April 16th, he proceeded to Malacca to take up the acting appointment of Colonial Surgeon there and I took over charge of the whole Province (Northern, Central and Southern).

2. In the Northern and Central Divisions there are two Government Hospitals, *viz.*:—at Butterworth and at Bukit Mertajam and three Estate Hospitals, *viz.*:—at Prye, Malakoff and Junjong Mati.

3. The Estates in these districts where immigrant labourers are employed are



Prye, Malakoff and Bertam—Tamil Immigrant coolies, Junjong Mati and Lee Ah Tye's—Chinese Immigrant coolies.

4. In the Southern Division of the Province there is one Government Hospital, *viz.*, at Sungei Bakap, and there are 4 Estate Hospitals, *viz.*, at Batu Kawan, Val d'or, Caledonia and Byram.

5. On the Southern Estates, Indian Immigrant labourers are employed while on the first two there are also some Chinese Indentured coolies.

#### General Hospital, Butterworth.

1. During the past year many alterations and repairs were done to the Hospital and outhouses including the whitewashing and painting of all the Hospital Buildings excepting the Colonial Surgeon's and Assistant Surgeon's Quarters. Fine wire gratings were fixed to the windows in the three Prison Cells. The drains to the back of the Mortuary were mended. A partition was made in Ward No. 1 to separate the Police Force in Hospital while the dispensary and Office were re-roofed.

2. The Wards are in good condition excepting the Female Ward, but provision has been made in the Estimates of 1903 for the erection of a new building with new latrines attached.

3. Among the works completed was a shed for the rubbish to be burnt in the incinerator.

4. *Hospital Staff.*—During the first 9 months, there was no Assistant Surgeon in the Hospital, and Senior Grade Dresser A. DE SILVA acted in the appointment. This office he filled very satisfactorily. On September 3rd, Mr. HOGAN returned from long leave and replaced Mr. CLARKE at Sungei Bakap, and Mr. CLARKE was then attached to the Butterworth Hospital. On December 16th, Mr. CLARKE went on a month's leave and Mr. DE SILVA again acted as Assistant Surgeon.

5. There are five dressers attached to the Hospital, *viz.*, Senior Grade Dresser DE SILVA, 4th Grade Dresser BARNABAS and three Apprentice Dressers, V. SINGARAM, V. FRANCIS and R. KESAVAN.

6. *The Water Supply.*—The water supply for the Hospital is the same as for the villages of Bagan Tuan Kechil and Butterworth, *viz.*, from the Bukit Mertajam Reservoir, and the amount has been ample.

7. *Work done.*—On January 1st, 1902, there were 21 cases in the Hospital. During the year there were 545 admissions making a total of 566 treated against 757 for last year. There were 75 deaths giving a percentage of 13·25 against 18·23 in 1901. The principal diseases treated were the same in all the Hospitals and of these Diarrhoea and Febricula led, thus, Febricula 74 cases, Diarrhoea 72 cases, Ulcers 39 cases, Anæmia 25 cases, Rheumatism 20 cases, Debility 14 cases, Intermittent fever 8 cases, Catarrhal Bronchitis 15 cases, Scalp wound 12 cases and Observation 49 cases.

8. Among the infectious diseases, small-pox proved pretty prevalent in the Northern District and accounted for 14 admissions into the isolation shed (Butterworth) with 5 deaths.

#### Government District Hospital.

##### *Bukit Mertajam.*

1. Several minor repairs were done during the year including re-ataping of the contagious disease ward and Assistant Surgeon's Quarters and some painting and colour-washing of the Hospital and Dressers' Quarters. Several other works, such as the building of new latrines, have been included in the Budget for 1903.

2. *Hospital Staff.*—Mr. WESTERHOUT continued in the appointment of Assistant Surgeon during the whole year with First Grade Dresser EDWARDS and Apprentice Dresser A. SINGARAM under him. The work was satisfactorily performed.

3. *The Water Supply.*—The Water Supply has the same source as that of the township of Bukit Mertajam. The taps in the Hospital grounds did not supply a sufficient amount of water for all purposes owing to want of pressure, hence water had to be carried in from the wells in the adjacent compounds and used for washing and cooking. The water after filtration to remove the thick muddy deposit was good.

4. *Work done.*—At the end of 1901, there were remaining 30 cases in Hospital, admissions for the year amounted to 400 making a total of 430 treated. There were 291 discharges, 6 transfers and 93 deaths, 5 cases absconded, and there remained 35 cases at the close of 1902.

5. The average daily number of sick males was 32·54 and of females 12. The percentage of deaths to total treated was 21·62. The chief admissions were among Chinese, 306 in all. There were 80 Tamils, 8 Malays, 5 Bengalis and 1 Siamese. Many of the cases came from Kulim.

6. The principal diseases treated were :—Ulcers 56, Anæmia 51, Tertiary Syphilis 21, Beri-beri 19, Diarrhœa 33, Dysentery 15, Intermittent fever 15, Secondary Syphilis 15, Debility 12, Rheumatism 11, Phthisis 9, Pneumonia 8, and Bronchitis 6.

7. There were 93 deaths, the chief causes being Anæmia 25, Diarrhœa 17, Dysentery 9, Phthisis 7, Pneumonia 7, Beri-beri 4. 14 deaths took place within 24 hours of admission. Many of the cases were brought in in a moribund condition for which very little could be done.

8. From enquiries into the cases admitted for Beri-beri from September, it was found that 8 out of 10 cases came from Kulim.

#### Estate Hospital.

1. *Prye Estate including Permatang Pauh.*—The Hospital is a well constructed building in a good situation. There are 3 wards, and a new ward, to be used as a Female Ward and also as a day nursery for the infants and children of field and other workers, is in a course of construction. Two new latrines were built this year.

2. *The Water Supply.*—The Water Supply for the Estate is good and ample. A part of it is obtained from the Bukit Mertajam Reservoir and is brought in pipes to the Estate. The Estate has in addition its own special reservoir on the same hill, but lower down, and its water is the one chiefly used for drinking by the coolies. The water is stored in closed iron tanks. The water is carried in water boats from a stand pipe near the main road to Permatang Pauh and is there stored in iron tanks. At Prye the coolie lines are well situated and are kept in very good order. The accommodation is ample. There is a first rate system of drains which open into a main drain leading down to the river where it is protected by a water gate. The scavenging is well done by a special gang drawn from convalescents and weakly coolies.

2. The coolie lines at Permatang Pauh are also in very good order and are kept clean while the drains are well flushed here as at Prye; the coolies sleep on raised platforms.

3. *Hospital Staff.*—Hospital Staff consists of a dresser and some attendants. The total number treated was 840, these cases were :—from Prye 518 and Permatang Pauh 322.

As in all other Estate Hospitals, Diarrhœa and Dysentery were the principal diseases treated. Fever (of an intermittent type) however accounted for most admissions, *viz.*, 224.

	<i>Fever.</i>	<i>Diarrhœa.</i>	<i>Dysentery.</i>	<i>Ulcers.</i>	<i>Colic.</i>	<i>Debility.</i>
Prye	106	46	6	82	21	12
Permatang Pauh	118	24	8	22	22	3

The chief causes of the mortality were Diarrhœa and Dysentery.

All serious cases and cases requiring special attention are sent to the Butterworth Hospital.

#### Malakoff Estate.

1. The Estate Hospital consists of 2 wards (male and female) and a shed within the Hospital grounds used only in the event of overcrowding. During the past year the accommodation in the wards was found ample for the number of cases. The male ward has 18 beds and the female 4 beds. Only on a very few occasions towards the early part of the year were the hospital wards in any way crowded. New latrines were erected during the year and a good drain built round them leading to a catch-pit.

2. The Hospital Staff consists of a dresser and some attendants. The present dresser has been on the Estate since June. The total treated for the year 1902 was 592 with but 2 deaths (both from choleraic diarrhœa) giving a percentage of deaths to total treated 33.

3. The principal diseases treated were Intermittent fever 230, Dysentery 26, Choleraic diarrhœa 5, Colic 28, Ulcers 42, Wounds 25, Abscess 20, Lumbago 15, Debility 12, Bronchitis 11, Syphilis 8.



4. The coolie lines comprise 117 houses, of which only 99 are now occupied. They are kept in good repair and are well ventilated. The coolies sleep on raised platforms. The cleaning of the lines is done by the general body of the coolies and the rubbish accumulated in dustbins in the centre of the lines is cleared once a week.

5. *Water Supply*.—The water supply is obtained from 3 wells (two near the office and one near the old Chinese Kongsì) dug in 1900, as the old wells were found to be greatly contaminated and the water unfit for consumption. The water in these wells is clear, good and abundant. There are a few surface wells in the gardens of the old coolies and coolies in the neighbourhood frequently use these wells instead.

6. The mortality on this Estate was very low in 1902. The urgent cases were treated in Butterworth where there were 52 admissions and 6 deaths.

#### Bertam Estate.

1. There is no hospital on this Estate and all cases of illness are sent to Butterworth Hospital for treatment. The coolie lines are clean and kept in good condition. Raised platforms are used for beds.

2. *Water Supply*.—The water supply is obtained from surface wells. The water appears very good and abundant.

3. There is very little sickness on the Estate, Fevers (Intermittent and simple continued) occur occasionally, Diarrhœa and Dysentery rarely. Admissions to Butterworth Hospital during the year, 16, and deaths nil.

#### Lee Ah Thye's Estate.

1. This Estate employs Chinese labour only. There are 74 Sinkhehs and Laukhehs. There is no Estate hospital and all cases are sent to Butterworth for treatment. There are 2 Kongsì houses, one near the manager's house for the field workers and the other about 2 miles away for brickworkers. The Kongsì houses themselves were kept fairly clean, but the Kongsì for the brickworkers has a most offensive pig sty and cesspool close to it. The Manager has now been requested to remove them. The health of the coolies is good. Ophthalmia however appears common on the Estate.

2. There were 8 admissions from this Estate into Butterworth Hospital and 4 deaths.

3. *Water Supply*.—The water is derived from surface wells.

#### Junjong Mati Estate.

1. On this Estate also Chinese labour only is employed. There is a hospital with a dresser in charge. The admissions were very few, only 36 cases were treated during the year with no deaths. All the urgent cases were sent to Bukit Mertajam Hospital, where 7 cases were admitted with 4 deaths.

2. *Water Supply*.—The water is obtained from surface wells. The Kongsì houses are clean and well kept.

3. *Work Done*.—There were 5 cases remaining on December 31st, 1901. Thirty-one cases were admitted giving a total of 36 treated. The principal diseases treated were Dyspepsia 5 cases, Diarrhœa 3, Dysentery 2, Intermittent fever 2, Ringworm 3.

#### Zymotic Diseases.

4. *Small-pox*.—There were many cases of small-pox in the North and Central Province. There was no difficulty in suppressing an outbreak, when the cases were at once removed and isolated and the infected houses disinfected and all contacts vaccinated. In most of the villages a distinct sanitary improvement has been achieved by the erection of isolation sheds by the villagers themselves at a suitable distance from all inhabited houses and there all cases are at once removed and treated.

In some out of the way villages which are fairly isolated in themselves and where there were no isolation sheds, there were small outbreaks attacking many inmates of the affected houses. Many of the cases assumed a malignant type often terminating in death.

5. *Cholera*.—In May, 4 sporadic cases of cholera occurred in the northern division. Cholera was then raging across the Mudah River in Kedah territory and it was probably introduced from there. In two or three cases the victims had drunk river water which had probably become contaminated. Precautions were at once

taken to prevent the spread of the disease from Kedah. Rigid quarantine was maintained and a strong body of Police was placed as a patrol on the borders to prevent any communication with the infected districts.

The first case in Province Wellesley occurred at Kapala Batas in a Malay who had a cocoanut estate by the river side and who had apparently drunk the river water. Two cases occurred in Permatang Bindahari. There were 4 deaths. No treatment could be successfully adopted as these cases were not reported till they were almost moribund. All precautions were taken to suppress the disease with a happy result.

6. *Chicken-pox*.—A few sporadic cases of chicken-pox occurred in various districts.

7. *Sanitation*.—The Sanitary Board started in July, 1901, proved a factor for good in the improvement of the villages of Bagan Tuan Kechil, Butterworth and Bukit Mertajam. Slowly but surely the old squalid native huts, which are invariably in the most insanitary condition, and are centres for diseases and epidemics, are being pulled down. With the careful study of all the plans for new buildings submitted for approval, the sanitation of houses is being improved.

Special attention is being paid to the sanitation of eating houses and bakeries in all the villages of the Province and frequent visits are made by the Health Officer and Sanitary Inspectors into these premises.

8. *Out-patient Department*.—On April 1st, 1902, Medical Out-patient Departments were established in all the Government Hospitals in the Province. These are kept open all day. Advice is free but a small charge is made for medicines. Paupers receive their Medicine free of charge. At Butterworth the monthly number of cases varies from 13 to 30, on an average about 26·7 cases a month, for the year 214 cases. The number of visits between 20 and 60 a month, and for the whole year 384. The receipts for the whole year amounted to \$37.10.

The chief diseases treated were :—Febricula 29, Bronchitis 22, Ulcers 24, Wounds 23, Diarrhœa 13, Anæmia 9, Rheumatism 9, Colic 9. At Bukit Mertajam the monthly number of patients varied between 32 and 40 and for the whole year there were 295 patients. 420 visits in all were made. Of these 192 were paying patients, 64 indigent patients, 37 Government Officers. The receipts amounted to \$37. Most visits were made by the Chinese, *viz.*, 149, the Tamils next 76 and the Malays 38.

The chief diseases treated were :—Ulcers 87, Intermittent fever 39, Rheumatism 81, Bronchitis 17, Syphilis 15, Diarrhœa 5.

#### Southern Division, Province Wellesley.

1. There are one Government and 4 Estate Hospitals under my charge in the Southern Division, *viz.*:—

Government District Hospital, Sungei Bakap.  
Batu Kawan Estate Hospital.  
Caledonia Estate Hospital.  
Byram Estate Hospital.  
Val d'or Estate Hospital.

#### Government District Hospital, Sungei Bakap.

2. During the past year various petty repairs were executed in the Hospital and outhouses and new drains were made around the Servants' quarters and outhouses.

3. As in the previous year no cases absconded from the Hospital.

4. *Water Supply*.—The source of water supply remains the same as in previous years, *viz.*, the two wells—

(a). In the hospital grounds for drinking and culinary purposes.

(b). In a Kampong on the opposite side of the road for washing purposes. This water is pumped into and stored in a cistern adjoining the hospital.

The water is good and abundant.

5. *Work done*.—On January 1st, 1902, there were 19 cases in hospital. During the year there were admitted 382 cases, making a total of 401 treated. There were 62 deaths giving a percentage of 15·46 against 14·73 of last year.

As in the other hospitals in the Province the principal diseases treated were Diarrhœa 36, Ulcers 34, Anæmia 35, Debility 25, Malarial fever 17, Dysentery 14, Tubercle 10, Bronchitis 11.



The deaths were chiefly due to Diarrhœa, Anæmia and Dysentery and were as follows :—Diarrhœa 16, Dysentery 9, Anæmia 11, Debility 8, Tubercle 5, Malaria 2, Pneumonia 2.

During the year there were only 2 cases of Beri-beri treated in this hospital both probably imported into the district, shewing the almost total absence of the disease in the South Province.

Malaria is present but of a very mild type and reacts almost immediately to Quinine. Many cases called intermittent fever for convenience, were in all probability ordinary simple continued fever or Febricula.

Diarrhœa continues the cause of greatest mortality. Anæmia also accounts for a number of deaths. This Anæmia is most resistant to treatment and often sets in as a final stage to Diarrhœa.

6. *Hospital Staff*.—I continued in charge during the whole year. Mr. F. CLARKE, Assistant Surgeon, was attached to this hospital for the greater part of the year but was replaced on September 3rd by Mr. HOGAN. Mr. DEVANASAM was in March transferred to Singapore and Mr. S. DORASAMY came from Penang to succeed him. Mr. A. MOSES continued throughout the year. The work done by all was excellent.

#### Batu Kawan Estate.

1. There were a few minor repairs done to the hospital wards and outhouses during the year.

2. *Water Supply*.—The water supply remains the same and is good and abundant.

During the long drought, however, in May, June, and July, the supply ran short and water had to be daily brought in water boats from Penang.

The sources of the Estate's water supply are some springs on Batu Kawan Hill where reservoirs have been formed by the damming up of little valleys. Pipes lead the water to the iron tanks in the coolie lines where it is stored.

3. *Coolie lines*.—Many of the lines had to be re-roofed and had petty repairs done to them. They were all kept in fairly good condition.

The houses were kept clean and the drains flushed, no special conservancy gang is maintained and all the scavenging and cleaning of the lines are done by the general body of coolies.

4. *Hospital Staff*.—The Hospital Staff consists of a Dresser and an Assistant Dresser and their work has been steady and good during the year.

5. *Indian Coolies*.—On December 31st, there were remaining 46 cases in hospital, the admissions amounted to 870 cases, making a total of 916 cases treated. There were 46 deaths, 34 among Indian Immigrant coolies and 5 among free coolies, 2 paupers and 5 children giving a percentage of 5.02 to total treated against 3.06 of last year.

The diseases were principally, Ulcers 229 cases with no deaths, Diarrhœa 111 cases with 10 deaths, Febricula 94 cases with no deaths, Measles 60 cases with three deaths, Dysentery 35 cases with five deaths, Syphilis 38 cases with no deaths, Gonorrhœa 23 cases with no deaths, Abscess 18 cases with no deaths, and cholera 18 cases with 14 deaths.

Among Chinese coolies 51 cases in all were treated with four deaths, (2 deaths being among Sinkah and 2 among free coolies). Ulcers accounted for 11 admissions, Ophthalmia 13, Diarrhœa 6 with one death, Dysentery 3 cases with 1 death, giving percentage of deaths to total treated as 7.84.

In October there was a serious outbreak of cholera on the estate but happily measures of quarantine and sanitary precautions proved efficient and the danger of a spread was averted.

#### Caledonia Estate.

1. Various minor repairs were done to the hospital wards and outhouses. There are 4 wards, 3 male and 1 female, and these provide ample accommodation for the sick of both Victoria and Caledonia. Many urgent repairs such as replacing the beams in ward 2, and reataping are now in process of execution.

The drainage of the hospital is good. A new mosquito room was fitted up in Ward 2 in March for the treatment of fever cases.

2. *Water Supply*.—For some time past the subject of the water supply of the estate has engaged a good deal of attention.

The supply is the same as that of Nibong Tebal, *viz.* :—the reservoir at Bukit Panchor. Owing to the great prevalence of gastro-intestinal diseases on this Estate

and with a view to ascertaining the principal cause, the water was analysed on 2 or 3 occasions and on each of them the Government Analyst reported most unfavourably. In addition to the bad quality of the water the supply has been far from sufficient for the Estate use and during the dry seasons the Jawi Trench water had to be used. This water is said to be better than the pipe water and is certainly much preferred by the natives. To remedy all these defects and to obtain a better and safer supply of water, a new boiling apparatus to supply boiled water on a very large scale is being fitted up. This will permit of an ample supply of water for the use of all the coolies and this water will be pumped into iron tanks in all the coolie lines (Caledonia and Victoria) and stored till used. In the hospital a simpler apparatus for boiling water was fitted up in December.

This supplies about 40 gallons or so of boiled water which is likewise stored for use. While on the subject of the water supply mention may be made of the supply of Byram. Byram water is obtained in water boats from the standpipe near Victoria and brought up to Byram. During the dry weather the supply fell short and Jawi Trench water had to be used.

The same cause (*viz.*, the prevalence of a high mortality from gastro-intestinal diseases) led to the fitting up of a boiling apparatus, and on October 8th the use of boiled water was started and with a few interruptions due to improvements of the process, its use was established.

There is an ample supply of boiled water for the use of the Estate. The water is pumped into and stored in cisterns in the lines. At the Hospital a Lawrence patent water softener and sterilizer has been also fitted up and its use started from December 30th. It boils 40 gallons daily.

The coolie lines were kept clean and in good repair. A special conservancy gang is now maintained on the Estate and the convalescent gang of the Hospital, who formerly cleaned the coolie lines, now works within the Hospital Grounds.

3. *Work done.*—On December 31st, there were remaining 98 cases; during the year 1,698 cases were admitted, making a total of 1,796. There were 107 deaths giving a percentage of 5.95 to total treated and the average daily sick was 57.83. The principal diseases treated were, Diarrhœa 341 cases with 38 deaths, wounds 234 Dysentery 117 cases with 15 deaths, Intermittent fever 191, Simple continued fevers 80, Anæmia 57 with 19 deaths, Debility 49 with 23 deaths, Colic 87, Gonorrhœa 45, Abscess 38, Sprain 27, Mumps 25.

The deaths were chiefly due to Diarrhœa, Dysentery, Anæmia, Debility, etc.

4. *Hospital Staff.*—Dr. MURRAY continued as Medical Officer for the Estate during the year. Attached to the Hospital are two dressers and a number of ward boys.

In Caledonia and Victoria, cook houses have been established for some time where for a very small sum, a coolie may obtain a good meal of curry and rice.

These cook houses are under the supervision of Managers of the Estates and a staff is specially appointed for them. This year the innovation was tried of making all the newly arrived Indentured coolies have their meals at these kitchens for a short time till they got to know the state of market and the cost of food.

The object is to prevent the buying and eating of filthy but cheap food which is probably one of the most potent causes of Diarrhœa and Dysentery which among Tamils not yet acclimatised are most fatal in nature.

The kitchens are kept open a great part of the night so that late comers may obtain a warm meal of wholesome food. They are at present not so popular as they should be; because the coolies prefer to feed themselves as cheaply as possible.

Another improvement and a very important one is that of the hot kanji meal which is provided every morning immediately before the coolies proceed to the fields. This has now been extended to males as well as females at a cost of about a cent each daily.

The object is to prevent them going on an empty stomach or after a very cold meal of rice (left over from the previous night) which are also potent causes of Diarrhœa.

#### Byram Estate.

1. This year great improvements have been effected in the Estate Hospital. The old Mortuary was removed and a new one erected on a better site. New latrines were erected and new drains made around them, also around Ward 2.

2. *Water Supply.*—I have mentioned this in my report on Caledonia.



3. *Work done.*—On December 31st there were remaining 39 cases, admissions during the year 1,314, making a total of number treated 1,353. There were 67 deaths against 35 of last year, giving a percentage of deaths to total treated of 4.95.

The principal diseases treated were Diarrhœa 229, Dysentery 112, Intermittent fever 204, Ulcers 137, Colic 71, Gonorrhœa 44, Wounds 133.

The deaths were chiefly Diarrhœa 39, Dysentery 17, Convulsion 2, Intermittent fever 1, Erysipelas 1, Debility 1, Anæmia 2, Dropsy 1, Confinement 1, Synovitis 1, Ulcer 1.

#### Krian Brickfields.

A few indentured coolies from Caledonia Estate are stationed here. Their health is good and they appear wonderfully free from Diarrhœa and Dysentery.

The sick are admitted into the Caledonia Hospital.

#### Val d'or Estate.

1. The Hospital on this Estate is small, but owing to the very small number of indentured coolies at present employed on this Estate (no Indentured coolies having been received this year) there have been very few admissions into hospital. The more urgent cases are sent into Sungei Bakap Hospital for treatment.

2. *Work done.*—There were only 5 cases remaining on December 31st, 1901. In 1902 there were 93 admissions making a total of 98. One death took place in the hospital, *viz.*, from Epilepsy. 31 cases were transferred to Sungei Bakap and of these cases there were 2 deaths.

The coolie lines are kept clean and in good order.

3. *Water Supply.*—The water supply is derived from a surface well dug in 1901 about 200 yards behind the Hospital and the coolie lines.

4. *Health.*—The health on this Estate has been good and Diarrhœa and Dysentery are no longer prevalent.

This improvement is probably due to the few coolies remaining, being acclimatised.

5. *General Remarks.*—There has been a slight improvement in the health on the Estates in the Province with perhaps the exception of Caledonia, Victoria and Byram where Diarrhœa and Dysentery still continue.

Attempts have been made to ascertain the causes of the gastro-intestinal disorders and various things have been blamed.

In Caledonia the introduction and sale of Samsoo (alcohol prepared from fermentation of rice) was for a time stopped but no difference was made in the admissions and mortality from Diarrhœa. The sale of Toddy was also put under supervision without effect.

It is hoped that the system of sterilization of all the water drunk by the coolies will lead to happier results especially if means are taken to supply this water to workers in the fields.

6. *Zymotic disease.*—As in the North and Central Province, small-pox occurred in a sporadic form but fortunately never attained epidemic proportions.

A very serious outbreak of cholera occurred in September in Sempang Ampat and Batu Kawan.

The history is interesting. It is believed to have been introduced into Sempang Ampat by a Chitty who took ill there and who had been a passenger on the *S. S. Zaida* which had brought a few cholera cases into Penang.

In all 12 cases with 10 deaths occurred at Sempang Ampat. On 20th September 4 cases with three deaths occurred at Batu Kongsî about  $2\frac{1}{2}$  miles from Sempang Ampat. The first case was a bullock cart driver who had partaken of some toddy at a Toddy Shop 2 miles from Sempang Ampat. This toddy was brought from Sempang Ampat. The first case at Batu Kawan occurred on 21st September and in all there were 18 cases with 14 deaths.

An epidemic of measles occurred in Batu Kawan where 60 cases were treated with 3 deaths, 2 cases of mumps only were noted in Batu Kawan, but at Caledonia there were 25 cases with no deaths.

7. *Public Health.*—No special feature in this connection need be mentioned. The work of removing old filthy native huts and their replacement by brick or wooden buildings with sanitary conveniences is continuing with marked improvement to the villages.

8. *Out-patient Department, Sungei Bakap.*—This was opened in April. 159 cases in all were treated, the principal diseases were Malaria 42, Ulcers 17, Bronchitis 16, Rheumatism 12, Worms 11, Febricula 5, Fczema 6, Dyspepsia 4, Diarrhœa 4.

9. The receipts amounted to \$14.50.

## APPENDIX D.

**Malacca.**

Report by Dr. SHEPPARD, Acting Colonial Surgeon :—

1. The population at the end of 1902 has been estimated at 97,369 as against 96,259 at the end of 1901. During the year there were 3,457 births registered (1,800 males, 1,657 females) and 3,037 deaths (1,827 males, 1,210 females) as compared with 3,780 births and 3,265 deaths in 1901. This gives a birth-rate for the whole Settlement of 35·50 per mille and a death-rate of 31·19 per mille as compared with 39·26 and 33·92 respectively in 1901.

The population within Municipal limits at the end of 1902 was estimated at 15,906. During the year there were 548 births (292 males, 256 females) compared with 540 births during 1901, and deaths 617 (380 males, 237 females) compared with 754 deaths during 1901. This gives a birth-rate of 34·45 per mille per annum and a death-rate of 38·16 per mille per annum as against 33·8 and 47·19 respectively for 1901.

The infantile mortality has been high. The causes of this are, I fear, irremediable. Infants cannot be reared on rice and other solid food.

The chief causes of death throughout the whole Settlement were Fever 1,398, Convulsions 697, Debility and Old age 189, Beri-beri 169, Bronchitis 129, Phthisis 126, Child-birth 37, Intestinal disorders 47 and Small-pox 22.

2. *Zymotic disease*—Dengue fever broke out in the last quarter of the year. This is, I believe, its first appearance in Malacca. The type of disease was in many cases severe. The mortality was nil as far as I know.

Small-pox broke out in the Settlement on June 16th and up to December 31st, 57 cases had been recorded. The spread of the disease has been due, in no small measure, to the unwillingness of the people to notify its occurrence. No less than 25 per cent. of the cases have been concealed. The opportunities for the spread of the infection have been thus enormously multiplied. Dread of removal to hospital has been the avowed reason for concealment. The fine of \$50 for not reporting the disease does not act as a deterrent, case after case of concealment having occurred in several districts, after fines had been imposed on the first offenders. The practice of allowing patients in rural districts to remain in their own houses has also in my opinion, tended to spread the disease.

Prompt vaccination of contacts has been carried out everywhere and has no doubt counteracted to a great extent the evil results of concealment and imperfect isolation.

I append tables shewing the monthly incidence, race distribution, age incidence and mortality amongst vaccinated and non-vaccinated. Table D-1.

3. *The Civil Hospitals*.—The total number of patients treated in the Civil Hospitals (including General, Pauper, and Isolation Hospitals, the Gaol Hospital and the District Hospitals at Alor Gajah and Jasin) during 1902 was 3,290 against 3,641 for 1901 and 4,372 for 1900.

The number of deaths was 243 giving a death-rate of 7·38 per cent. against 8·66 for 1901 and 8·02 for 1900.

**Durian Daun Hospital.**

1. A new operating room has been nearly completed, the fittings have already been indented for and will be ready in the early part of 1903.

Ward No. 1 has been improved, the old bertam walls have been replaced by plank weather-boarding and the roof has been raised.

A new latrine for the Beri-beri and fever wards has been completed, the pattern being the same as that adopted at the Tan Tock Seng's Hospital at Singapore. All the other latrines have been similarly altered.

All the wards, latrines and quarters were lime-washed wood-oiled, painted and tarred during the year.

**General Hospital.**

1. *European Ward*.—The total number treated was 5, of which 4 were discharged and 1 died—cause of death being Chronic Nephritis, and the average daily sick was 23.

2. *Native Wards*.—Total treated 298, discharged 280, died 10, remaining 2 and the average daily sick was 7·02.



Deaths due to Beri-beri 2, Remittent fever 2, Phlegmonous Erysipelas 1, Cerebral Hæmorrhage 1, Apoplexy 1, Phthisis 1, Scalds 1, Fracture of skull 1.

#### Quarantine Camp.

The total number treated was 30, discharged 25, died 5, and the average daily sick was 1·51.

The deaths were due to Small-pox.

#### Pauper Hospital.

1. The total number treated was 1,904, discharged 1,667, died 148, remaining 89 and the average daily sick was 130·72. The percentage of deaths to total treated was 7·77.

The daily average number of sick has declined from 199·54 in 1899 to 130·72.

2. *Beri-beri*.—There were 145 admissions (and 29 deaths) into the General Hospitals, the total number treated being 190 giving a death-rate of 15·27.

Although the admissions from this disease have considerably fallen, the death-rate remains high. Eight deaths occurred within 24 hours of admission. The experiment was tried for a few months of feeding a certain number of the patients on par-boiled rice but no reliable deductions as to the value of the treatment could be drawn owing to the fact that many of those placed on the new rice absconded or asked for their discharge.

3. *Venereal Diseases*.—The total number of cases treated was 220 as against 251 in 1901 and 250 in 1900. There were 34 cases of Primary Syphilis against 42 in 1901 and 13 in 1900.

4. *Phthisis*.—The death-rate from this disease remains very high being 35·71 per cent. for the year. The patients usually seek admission in the last stages of the disease.

5. *Dysentery*.—The total number of cases treated for this disease (30) is low but the number of deaths (6) giving a death-rate of 20 per cent. is high.

6. The admissions for Debility and Anæmia still continue high. Mal-nutrition caused by ill-feeding is chiefly responsible for this.

7. *Lunacy*.—Twenty-one persons were sent for observation for lunacy during the year, of whom 10 were certified and committed to the Singapore Asylum.

8. *Police*.—All Police Stations in the Settlement were inspected during the year, and the condition of each reported upon. The number of Police admitted to Hospital was 160, the nationalities being Malays 132, Sikhs 21, Klings 6, and Chinese 1. The chief diseases were Intermittent fever, Debility, Rheumatism, Asthma, Beri-beri, Diarrhœa etc. Two cases of Small-pox occurred in Police Constables who were on quarantine duty. Four deaths occurred, 3 from Beri-beri and 1 from Phlegmonous Erysipelas. 72 recruits were examined, of whom 17 were rejected. 11 men were invalided during the year.

9. *Necropsies*.—Twenty-seven *post mortems* were performed.

10. *Operations*.—Seventy-four major and minor operations were performed during the year.

#### Prison Hospital.

The general health of the prisoners and the sanitary condition of the gaol have been satisfactory. The average daily number of prisoners was Civil 5·17 and Criminal 17·42. There were 14 admissions to Hospital for Debility 2, Phagedœna, Anæmia, Bronchitis, Phthisis, Asthma, Jaundice, Ascites, enlarged spleen, Orchitis, Necrosis of Femur, Thecal abscess and wound of abdominal Parietes (one of each) and one death from Phthisis. In addition to these 59 prisoners suffering from Beri-beri were brought from Singapore and confined in the upper storey of the Civil Prison. Three of these died. Twenty-seven were sent back much improved in health and the remaining twenty-nine are doing fairly well. The possibility of the infection of the Malacca Gaol by these prisoners may be worthy of consideration.

#### Leper Asylum.

Sixteen lepers were admitted during the year, one was discharged, one died, and fifteen were transferred to Singapore, including one female from the Pauper Hospital. There is room in the Hospital for only six lepers at a time. There is no provision for female lepers. These are detained in a special ward at Durian Daun Hospital.

### District Hospitals.

The number of patients admitted to the District Hospitals shews a decrease, being 997 against 1,333 in 1901, and 1,414 in 1900. The decrease occurred at both the Hospitals and is partly due, I am informed, to the decrease in the number of coolies employed in the country districts. As in the Town Hospital there has been a falling off in the number of admissions for Beri-beri, there being 61 as against 73 in 1901, 144 in 1900, and 202 in 1899. The number of Out-Patients shews a large decrease being 915 against 1,156 in 1901 and 1,007 for 1900. (Alor Gajah 624 against 705 in 1901 and Jasin 291 against 451 in 1901.)

*Staff.*—I took over acting charge on April 22nd from Dr. F. B. CROUCHER who went on long leave.

There have been two other changes in the staff. All have performed their duties satisfactorily.

### Alor Gajah Hospital.

1. The average daily number of sick was 23·21, percentage of deaths to total treated 4·75. In 1901, the average daily number of sick was 22·03 and the percentage of deaths to total treated 5·60.

2. The chief causes of death were Chronic Diarrhœa 3, Malarial fever 3, Dysentery 2, Pneumonia 2, Phthisis 2, Beri-beri 2, Chronic Dyspepsia 2, Nephritis 2.

3. The chief diseases were Beri-beri 23 cases, Malarial fever 85 cases, Syphilis 58 cases, Dyspepsia 13 cases, Diarrhœa 13, Anæmia 12, Ulcer 124, Wounds 15.

4. The nationalities of those treated in 1902 were Chinese 322, Malays 53, Tamils 84.

5. The total number of cases treated was 459, of these 49 came from the Native States, *viz.*, Tampin 28, Sungei Ujong 3, Kra 5, Johol 1, Kwala Pilah 3, Tankol 5, Jelebu 2, and Johore 2.

6. Seven members of the Police Force were admitted to Hospital.

7. The number of out-patients treated in 1902 was 624 as compared with 705 in 1901, the number of paying patients 308 as against 393 in 1901. Receipts \$30.55 as against \$38.45 in 1901.

8. No alteration has been made in the Hospital buildings. The wards, servants' quarters and out-houses were whitewashed at the beginning of the year. The attap walls of the Contagious Ward for females were renewed. A few rotten beams and posts have been replaced during the year.

### Jasin Hospital.

The average daily sick was 25·46 and the percentage of deaths to total treated 9·65.

The nationalities of those under treatment were Chinese 495, Malays 10, Klings 74 and Javanese 1.

Patients from Native States were Asahan 85, Bokoh 18, Gamis 4, Tongka 8 and Jelebu 1.

The number of out-patients treated was 291, *viz.*, Europeans 1, Chinese 140, Malays 93, Klings 33, Bengali 6, Sinhalese 3 and Eurasians 15.

The collection in 1902 was \$22.85 as against \$34.15 in 1901.

The number of Police Officers admitted into Hospital was 7 and Police cases 16.

The chief diseases treated were as in 1901, Ulcer of leg, Fever, Beri-beri and Intestinal disorder.

The Wards and outhouses, Assistant Surgeon and Dressers' quarters and out-houses and stable were whitewashed, tarred and varnished. Various minor repairs were carried out during the year.

## APPENDIX E.

Hospitals for women previously treated under the provisions of "The Contagious Diseases Ordinance."

### Singapore.

Dr. DANE, Colonial Surgeon, reports as follows:—

1. *Accommodation.*—For many months we have been so full that patients had been refused admission so an extension of the buildings asked for in 1901 was approved and should have been carried out this year (1902).



2. *Number of patients.*—But the erection of more private hospitals not merely obviated this extension but has decreased our admissions to 200 as against 353 in 1901.

3. *Staff.*—Mr. Assistant Surgeon LEICESTER has done his work excellently. He made a suggestion about utilising the old Lunatic Asylum buildings by which Government will save \$756 per annum, for which Mr. LEICESTER deserves much credit.

4. Forty-two patients remained at the beginning of 1902, which, with 200 admitted, make up a total of 242 treated.

5. The following is a summary of the diseases treated :—

(a). Venereal diseases and their sequelae	...	145
(b). Other diseases	... ..	97
	Total ...	<u>242</u>

6. The average daily sick was 39·4 against 64· in 1901.

7. There were 30 deaths in all giving a percentage of 12·3 as compared with 4·9 last year.

This high death-rate is due to the fact that only cases very ill are now sent to us, the minor cases being detained in the private hospitals.

8. The causes of deaths were as follows :—Beri-beri 5, Remittent fever 1, Syphilis secondary 7, Anæmia 1, Debility 2, Valvular disease of heart 1, Tubercular phthisis 4, Melæna 1, Diarrhœa 5, Jaundice 2, and Albuminuria 1.

### Penang.

Report by Dr. G. D. FREER, Acting Colonial Surgeon :—

1. Thirteen cases remained at the beginning of the year, 63 were admitted, making a total of 76 treated.

The admissions were made up as follows :—

Japanese 31 (1 died), Chinese 17 (7 died), Hindus 15 (6 died).

2. The chief diseases treated were :—Venereal affections 19, Beri-beri 16, and Tubercle 12.

3. The average daily sick was 10·92, and the percentage of deaths 18·42 against 14·18 and 14·03 respectively for the previous year.

### Malacca.

Report by Dr. W. S. SHEPPARD, Acting Colonial Surgeon :—

There were 13 admissions to Hospital for Venereal disease as follows :—Japanese 5, (Primary Syphilis 4, Secondary Syphilis 1), Chinese 8, (Primary Syphilis 4, Secondary Syphilis 2, Gonorrhœa 2), and 3 admissions from other causes, (Phthisis 1. No discernible disease 2).

There was one death from Phthisis and there were remaining at the end of the year 3 (1 Japanese and 2 Chinese).

## APPENDIX F.

### OUT-DOOR DISPENSARIES.

#### Singapore.

Seven thousand three hundred and eighty-eight patients attended the Dispensary during the year, being an increase of 842; the increase due to great number of Chinese treated, being 3,860 in 1902 against 3,578 in 1901, and the fees collected during the year amounted to \$2,236.55, an increase of \$394.45 on the previous year.

The following shews the nationalities of the patients :—

	<i>Males.</i>	<i>Females.</i>
European	... 45	7
Eurasian	... 126	121
Malay	... 327	65
Indian	... 1,956	328
Chinese	... 3,860	381
Other Nationalities	... 87	85
Total	... 6,401	987

The diseases treated according to their order of frequency were :—Ulcer 1,385 cases, Fever 1,154, Venereal affections 916, Injuries 774, Skin diseases other than ulcer 689, and Rheumatism 582.

### Penang.

Report by Dr. G. D. FREER, Acting Colonial Surgeon :—

1. This Institution continues to be well patronised by the poorer class of natives whom it is chiefly intended to benefit.
2. The patients treated during 1902 numbered 4,894 as against 4,286 for 1901. The daily average number of patients attending was 27.80 and the receipts amounted to \$643.40.
3. The principal diseases treated were :—Malarial fevers 1,237, Rheumatism 486, Bronchitis 253, Ulcers 298, Diarrhœa 220, Dyspepsia 221 and various injuries 243.

### Malacca.

1. The number of patients attending the Dispensary was 1,864 as against 1,905 during the preceding year.
2. The receipts were \$191.60 compared with \$376.20 in 1901. This somewhat falling-off is in the main due to the establishment during the year of a rival institution (The new Dispensary) which has attracted a large proportion of our former clientele.
3. There has been an increase in the number of Government Servants and indigent patients attending the Dispensary. The total number of visits has also increased from 4,902 in 1901 to 6,665.
4. The chief diseases treated were Malarial fever 265, Rheumatism 124, Venereal disease 118, diseases of Respiratory system 190, diseases of digestive system 208, skin diseases 132, dengue fever 26.
5. The following shews the nationalities of the patients :—Europeans 94, Malays 327, Eurasians 525, Natives of India 319, Chinese 544, Others 55.

## APPENDIX G.

### VACCINATION.

#### Singapore.

1. The number of vaccinations performed by the public vaccinator was 2,914, of which 8 were modified and the rest successful. Of the number vaccinated 1,397 were males and 1,517 females ; 2,034 were infants under 1 year old.
2. The cost of each vaccination was a little over 38 cents.
3. The number of births registered during the year was 4,852.
4. The number vaccinated in the Town district was 2,090 and that in the country 824.
5. Besides the above, 1,268 vaccinations with 29 failures were done by Mr. J. C. PESTANA and 83 vaccinations with 4 failures by Mr. A. HOEDEN, Licensed Vaccinators.



6 The good result of the vaccinations is greatly due to the excellent quality of Vaccine Lymph supplied by the Pasteur Institute at Saigon.

### Penang.

Report by Dr. G. D. FREER, Acting Colonial Surgeon :—

1. The number of vaccinations performed by the public vaccinators was 3,103 as compared with 3,061 in 1901. This does not include 451 vaccinations in the Prison and those performed by private practitioners.

2. The percentage of perfect and modified cases was 91·36%, of failures 5·57% and of the not seen 3·06%.

3. Of the total, 1,636 were in Municipal Limits and 1,467 in the country districts, the average cost for each successful and modified case in the former being 65 cents and in the latter 74 cents.

4. At the Dindings, 124 children were vaccinated with a percentage of successful cases of 91%.

### Province Wellesley.

1. The number of vaccinations performed for the whole year by the public vaccinators was 4,001 against 3,559 for 1901. Of these 3,573 were perfect, 150 modified, 264 failed and 14 not seen. The number of failures to total vaccinated was 6·05 against 5·89.

2. In the Northern District Mr. DE SILVA, Public Vaccinator, acted as Assistant Surgeon and one of the Junior Dressers had to be appointed to do the vaccination in his stead.

### Malacca.

Report by Dr. W. S. SHEPPARD, Acting Colonial Surgeon :—

The number of operations performed was 4,605, of which 3,969 were successful, 468 failed and 168 were not seen. The percentage of failures to total vaccinated was 10·16. The cost of each vaccination was 27·37. 510 vaccinations have been performed outside our usual vaccination centres owing to the outbreak of small-pox. The number of births registered during the year was 3,457. The number of vaccinations performed on children who were one year old and under was 3,454. Saigon lymph has been employed.

## APPENDIX H.

### QUARANTINE.

#### Singapore.

Report by Dr. G. E. BROOKE, Port Health Officer :—

1. *Harbour Work.*—The number of incoming ships from ports in quarantine amounted to 901. These were all boarded and the following numbers of crew and passengers were examined: crew 63,037 and passengers 244,863.

2. *Quarantine Station.*—The Quarantine Station was occupied during 360 days of the year and in this time 17,668 passengers were landed on the Island for treatment or observation.

The largest number on the Island at any one time was 2,748 for four days. The average daily number of resident passengers was 496·88. The total number of sick treated was 2,029. The percentage of deaths to total treated was 26·91. The average daily number of sick under treatment was 24·93.

The buildings on the Island (except in isolation wards) are sufficient in quantity though lacking much in quality. The permanent wards are all in good condition. The atap sheds however although many of them are almost new have proved very unsuitable, either collapsing by the force of the wind or being deprived of the kajang sides by coolies who required a mat to sleep on and they are always hard to disinfect.

The wells on the Island have several times been out of order during the year, but at best are incapable of supplying the island when full of passengers.

The passengers have, on the whole, given very little trouble, though an occasional fight has shewn that things might become at any time very uncomfortable for the small and isolated staff were 2,000 to 3,000 coolies to become suddenly recalcitrant. This possibility could be obviated by connecting the Station and Town with a telephone.

3. *Staff.*—Dr. DAVIDSON, Port Health Officer, left on the last day of the previous year. I was appointed to the post from the 31st January, but did not arrive to take up the appointment until the 27th July.

Assistant Surgeon PESTANA did duty throughout the whole year as Deputy Health Officer. From the beginning of the year until 9th October, Assistant Surgeon MITCHELL was Assistant Surgeon Resident at St. John's, being assisted by 2nd Grade Dresser NARSUMULU, a Supernumerary Dresser being also engaged to tide over a period of heavy work. From 9th October, Dresser NARSUMULU acted as Dresser in charge at St. John's. I have nothing to complain of in the way the latter carried out his duties when under my charge. I must make special mention of the good work done by Assistant Surgeon PESTANA during the year as being painstaking and conscientious.

### Penang.

Report by Dr. G. D. FREER, Acting Colonial Surgeon :—

1. One hundred and eighty thousand six hundred and thirty-two (180,632) passengers and crew of 1,000 vessels were inspected on arrival and 5,755 deck passengers from 13 different ships were detained for observation at the Quarantine Station.

2. Five steamers landed cases of cholera at the Quarantine Station and of 42 patients treated there for this disease 25 died.

3. The greatest number of passengers at the Station at any one time was 1,320 from three different steamers. One of these was a transport from China with 500 Italian troops on board. As they were somewhat overcrowded and had had two cases of cholera on board after leaving Singapore, they were, at their own request, allowed to land the troops for 10 days at the North and South Camps, which again proved extremely useful for quarantine purposes.

4. Five cases of small-pox and 2 of chicken-pox were also removed from steamers, and the necessary steps taken to prevent the spread of the disease among the other passengers.

5. Twenty-one (21) Pilgrim ships, with 6,957 Pilgrims were inspected.

6. The construction of the new storage Reservoir at the Quarantine Station was continued throughout the year but is not yet quite completed.

### Malacca.

Report by Dr. W. S. SHEPPARD, Acting Colonial Surgeon :—

The Quarantine island was not occupied in 1902.

One thousand seven hundred and seventy-four passengers from Singapore were inspected for cholera between February 2nd and March 9th, and 1,464 passengers from Port Swettenham for plague between April 27th and June 1st. No case of either disease was discovered or landed in Malacca.

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## APPENDIX I.

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Report on the Government Analyst's Department by DR. R. DANE, Acting Government Analyst :—

1. *Water Analysis.*—Thirty-nine samples of water were received for analysis during the year 1902.



Of these thirty-three proved to be of good quality and the rest were bad. These samples were mainly from wells situated in different parts of the Straits Settlements.

2. *Milk Analysis*.—Twenty-six samples of Milk have been received for analysis and reported upon during the year. Of these seven shewed adulteration, in which cases the milk vendors were prosecuted and many were convicted.

The majority of the samples were sent by the Heads of the General Hospital and Lunatic Asylum.

3. *Toxicological Examinations of Stomachs, etc.*:—Twenty-one cases involving a search of poisons have been reported upon during the year. In two cases opium was found, in one case Arsenic was found and in another case an unknown alkaloid while the others gave negative results.

4. *Counterfeit Coins*.—Seventy-seven counterfeit coins have been received for analysis during the year. The bad coins were made in every case of an alloy of tin and zinc. The imitations were of excellent workmanship.

5. *Toxicological Foodstuffs*.—Thirty samples of foodstuffs were examined and reported upon during the year.

These consisted of rice, tea, tapioca, sago, etc. In one instance ten samples of different kinds of rice were examined for arsenic but with negative results. This was in connection with Beri-beri.

6. *Mineral Analysis and Assaying*.—Forty-three assays were made during the year.

In the majority gold and silver were looked for but other minerals containing lead and tin were also represented.

7. *Chandu*.—Nineteen samples were analysed during the year.

These samples were analysed in order to ascertain the percentage of morphine and water and to determine the quality.

8. *Miscellaneous*.—Seventy-three samples were received for analysis during the year. This work consisted of methylating spirits, examinations of Gambier, Urine, etc.

9. *Petroleum Examination*:—The following table shews a comparison of oils tested during the years 1901 and 1902:—

Description of Oil.			1901.			1902.			
			Number of vessels.	Tins.	Tons in bulk.	Number of vessels.	Tins.	Tons in bulk.	
Langkat oil—									
(a) Crown brand	...	...	80	414,635	...	90	394,623	...	
(b) Dragon brand	...	...	20	349,700	...	22	365,020	...	
American	{	Devoe's	...	3	214,868	...	1	70,000	...
		Comet	...	...	...	...	1	40,000	...
		Colza	...	...	...	...	1	2,000	...
Rangoon	...	...	1	150	...	1	600	...	
Russian	...	...	2	...	13,000	...	...	...	
Palembang	...	...	54	...	42,300	32	...	12,845	
Petroleum	...	...	12	200	13,744	16	...	22,706	
			172	979,553	69,044	164	872,243	35,551	

Naptha, Benzine, Benzol and Motorcarline were imported by Messrs. BEHN MEYER by 7 vessels.

10. *Private Oil Testing*.—Twenty vessels. These vessels on the voyage to Hong Kong had their oil tested here in order to avoid detention outside Hong Kong Harbour.

11. *Staff*.—The Government Analyst, Mr. BURGESS, had to go to England on October 17th on account of ill health, and I have been acting for him since.

Mr. SEELHORST has done some excellent work and Mr. ANGUS has been steady and worked hard. The clerk has done his work very well.

### APPENDIX J.

Report on the Reformatory by Dr. R. DANE, Colonial Surgeon, Singapore.

I am not satisfied with the state of health of the boys at the Reformatory. The improvement in the health of new comers on which I remarked in my report for last year, hardly occurs now, and the boys do not look so well as they did. An outbreak of a serious kind of inflammation of the eyes (granular ophthalmia) recently occurred.

The following causes are at work prejudicial to health :—

- (a) The dormitory is ill ventilated.
- (b) Very little sunlight ever gets in, while it is very important that a lot should get in.
- (c) The mosquito curtains could not be kept properly clean during the months of drought.
- (d) The latrine is the source of foul and noxious odour frequently during the day and constantly at night. This is due to its bad position (it opens directly into the dormitory), its faulty structure, the dirty habits of the boys and the scarcity of water.

The dormitory is 140 feet long by 20 feet wide and there are 58 boys : so the superficial area for each boy is 48 square feet. If it were not for the mosquito curtain on each bed, this would probably be enough and were the building more open to all breezes and sunlight, 48 square feet might be enough. But the eaves are very low and the boundary wall and adjacent buildings interfere to a great extent with ventilation. It is likely this dormitory will be rebuilt in a short time and in a more permanent style.

Report on Indentured Tamil Coolies engaged for the Singapore-Johore Railway by Dr. R. DANE, Colonial Surgeon, Singapore :—

There is nothing to be added to what I said last year. A large proportion of the cases admitted to the Railway Hospital complaining of "Fever" had no fever at all after admission. Of the cases described as Dysentery, many were only congested liver.

### APPENDIX K.

Remarks on Typhoid Fever cases admitted to the General Hospital, Penang, during 1902, by Dr. G. D. FREER, Acting Colonial Surgeon :—

I. There were 30 admissions to this Hospital for typhoid fever during the year, of whom 14 were Europeans, 10 Chinese, 3 Hindus, 1 Eurasian, and 1 Bengali. This is quite exceptional for, as a rule, the admissions for typhoid during a year number 2 or 3 only. In 1900 there were 2 admissions and in 1901, 3 admissions, all of whom were Europeans.

Of the Europeans, one case was admitted in January, one in March, 6 in April, 3 in May, 2 in July, and one in September. Six of the Europeans were landed sick off steamers arriving from Chinese ports, 3 off steamers from Indian ports, one patient came from Perak, and only four of the cases were residents and could be said to have contracted the disease in Penang. The first three cases were all from steamers.

Of the natives one was admitted in March, 8 in April, 4 in May, 2 in June, and one in December, and of them little more need be added than that they came to Hospital as a rule in a late stage of the disease and shewed a high mortality, 7 of the cases proving fatal. One point noted about the Native Wards should however be mentioned, and this was the plague of house flies which infested them during April and May, wherever there was a typhoid patient. I have never seen so many before in the Wards, and they proved such a pest, that one of the Wards was hurriedly made fly proof by fixing mosquito-netting over the doors and windows, and all the typhoid cases removed into it. The other patients in the Wards at the same time seemed to afford nothing like the same attraction to the flies as the typhoid cases. The following clinical remarks refer to the fourteen European patients :—

The highest temperature noted in any of the cases was 107° F, this was on the



17th day after admission, the 28th day of illness, and the patient afterwards made a good recovery. In three other cases the temperature ran as high as  $106^{\circ}$  during the course of the fever, and in five cases it went up to  $105^{\circ}$ .

What appeared to be relapses occurred in two cases. In one the temperature reached normal after 33 days fever, and remained so for two days; it then commenced rising again until it reached  $105^{\circ}$ , and continued high, with remission, for the next 8 days, when it once more came down to normal and remained so. Accompanying the relapse in this case, there was diminished resonance over both bases of the lungs with enfeebled breath sounds. In the other case the temperature fell to normal after 29 days fever and remained down for 17 days; then, coincident with the onset of the menses, it rose to  $103^{\circ}$ , and remained two or three degrees above normal for the next five days.

These cases bore out the rule that in tropical typhoid the diarrhœa and rose-rash, which are looked upon as useful aid to the diagnosis of the disease at home, are frequently absent. In six of them there was diarrhœa with characteristic pea-soupy stools, but in five others there was obstinate constipation, requiring the use of enemata, during the whole course of the disease. Those with constipation all made a good recovery, and the disease itself seemed to run a milder course where this symptom was present. Constipation at the end of the attack was the rule even with patients who had at first suffered with Diarrhœa and its occurrence came to be looked upon as a favourable symptom indicating usually commencing convalescence. In three cases only was the rose-rash noted as well marked, in four others an ill-defined rash was present. One patient developed a bullous eruption, similar to pemphigus, about the neck, front of chest, and axillæ. He was one of those with a well marked rose-rash and died in a few days from the time of admission, about the 17th day from the commencement of the fever. Epistaxis occurred in four cases and if anything seemed to afford some relief to the headache. Although some slight increase in the area of dulness was common, there was no marked enlargement of the spleen in any of the cases. Gurgling in the right iliac fossa could be detected in most of the cases.

One patient in whom diarrhœa, tympanities and abdominal tenderness had been prominent symptoms, had somewhat profuse hæmatemesis on several occasions between the 12th and 18th days of the disease. The application of an ice bag and ice packs to the lower part of the abdomen kept it in check, and she afterwards did well.

Pulmonary complications were noted in four cases, 2 of which proved fatal. Two cases, one a fatal one, had signs of hypostatic congestion of the bases of the lungs. In another fatal case sibilant rhonchi and puerile breathing were present all over both lungs. One patient, in whom rhonchi were audible at the left base, began to cough up blood on the 5th day of his illness, and three days afterwards he complained of sore throat and of severe pains in his knees and ankles; he afterwards recovered. The only details about the treatment that need be mentioned are that the wet pack was used whenever the temperature went above  $104^{\circ}\text{F}$ , and medicinally, the chlorine mixture recommended by Burney Yeo, containing 3 grains of quinine in each dose, appeared to be most beneficial. In some of the worst cases the patient was kept in the wet pack for days together, as it was found not only to keep down the temperature, but to have a distinct soothing effect, relieving restlessness and inducing sleep. Out of 14 cases, 10 recovered and 4 died. Eliminating one of the cases who was moribund on admission and died 2 hours afterwards, the ratio of deaths to total treated equals 23 per cent. For typhoid fever in the tropics this is a low percentage, and speaks well for the care bestowed on the patients by the Nursing Sisters. The average stay in Hospital of those who recovered was 44.2 days, and of those who died 6 days.

## II.—NOTES AND TEMPERATURE CHARTS OF TWO CASES OF "UNCLASSIFIED FEVERS".

These cases illustrate the difficulties occasionally met with out here in the diagnosis and treatment of certain fevers, cases in which no more certain diagnosis can be made than that of "Unclassified Fever."

1. *Case 1 A. G.*—A young German was brought to hospital on the 9th October, 1902, from a German Mail steamer, on board of which he was employed in connection with the electric lighting. He appears to have been taken ill a few days before admission, the day after leaving Hongkong, first of all shivering and afterwards sweating. He was not ashore at Hongkong. When seen by me on the evening of admission, he was rolling about on two mattresses placed on the floor and holding the back of his head with both hands. When spoken to he became extremely irritable, used bad language and made a curious hissing noise with his mouth. His



temperature taken in the axilla was  $104^{\circ}$  F. He was at once placed in a wet pack and given  $\frac{1}{2}$  grain of morphia hypodermically after which he slept and passed a fair night. On the following day he was less restless but still irritable, when spoken to he turned away, and, on feeling his pulse, he tried to snatch his hand away. He said he had much headache, chiefly at the back. As he lay on his side in bed his head seemed somewhat retracted, and the muscles of his neck rigid. His eyes were not suffused, and there was no marked contraction of the pupils, which were of equal size. There were no physical signs to be made out in the chest or abdomen. The tongue was moist but furred and the bowels constipated. He was ordered a 5 grain dose of calomel and sodii salicyl grains xx every 4 hours. The further progress of the case will be apparent on referring to chart 1. Wet packs brought the temperature down to normal at first, but it quickly rose again and remained high with remissions for the first 17 days, after that it became irregular and for the last 7 or 8 days in hospital of an intermittent type. The salicylate was continued until October 15th, and then quinine was given for some time both by mouth and hypodermically, but neither drug appeared to have much effect on the fever. On October 25th, he was ordered 5 grains each of quinine and phenacetin every 4 hours and the same evening his temperature reached normal for the first time since October 10th, but it soon began to rise again. On October 31st he was given the chlorine mixture of Burney Yeo, containing 3 grains of quinine in each dose, thrice daily, and on November 13th he was put on Bark and Ammonia mixture. The pulse was at first of good volume and strength and certainly slow in relation to the temperature. After the first month in hospital it became quicker and markedly dicrotic. No abnormal physical signs were at any time made out in the chest or abdomen except that in the fourth week after admission, the area of splenic dulness was somewhat increased, although the edge of the spleen could not be felt. The headache, irritability, and restlessness were the most prominent symptoms for the first week, and there was more or less delirium at night; afterwards, these symptoms subsided, and from being somewhat intractable, he became most amenable to treatment, taking well both food and medicine.

Gastro-intestinal symptoms were not marked. Vomiting only occurred twice. The tongue remained moist, although coated with a white fur for the first 2 or 3 weeks. All through he was constipated, and required occasional doses of calomel.

The urine, examined on several occasions, contained neither albumen nor sugar, and the quantity passed was noted as being abnormally great in amount. Profuse sweats, mostly at night, were a marked feature for the first 3 or 4 weeks and he was always thirsty. A roseolar eruption on the arms and legs was noted on October 31st, it faded away in a day or two, leaving brownish pigmented spots. On October 26th he complained of much pain in the knee joints, especially the right. No effusion was perceptible. On November 2nd the right knee was still painful and the muscles of the right calf were also tender and painful on handling. The patella reflexes were present. These pains continued up to the day of discharge. As the disease progressed he lost flesh and looked pale, but the blood count on three occasions shewed the red cells to be over 5,000,000 per c. m. m.

On the 18th November, although he still had daily rises of temperature, his general condition was so far improved, that the opportunity was taken of sending him to Europe.

The question remains, what was the nature of the fever? Malaria can almost certainly be excluded, as the microscopical examination of the blood on several occasions, both before any quinine was given as well as afterwards, shewed no evidences of malaria in stained and unstained specimens and the administration of quinine had no effect on the course of the fever.

Widal's test for typhoid was tried at the hospital on October 19th and 29th with negative results. The possibility of it being a case of Malta fever suggested itself, especially in view of the joint pains. Specimens of blood were therefore taken on October 29th and November 16th and sent in sealed pipettes to the Pasteur Institute, Kasauli and to the London School of Tropical Medicine. From the former Major PEMPLE kindly reported that there was no reaction for either Malta Fever or Typhoid; and from the latter Dr. DANIELS replied that there was no reaction with Malta Fever cultures, but that he did not consider it conclusive as considerable alterations occur in blood when kept and that neither negative nor positive results are reliable in blood that has been kept and probably exposed to fairly high temperature. The case presented some points of resemblance to the account given of epidemic cerebro-spinal meningitis. The cardinal symptoms of this affection as given by Dr. ORMEROD



(Albutt's System of medicine) are fever of sudden onset, with depression of the vital powers, with or without rash, pain in the head and neck, retraction of the head and oftentimes delirium and coma. These symptoms were mostly present, but on the other hand it is unusual to get an isolated case of this disease and other symptoms usually present, such as suffusion of the conjunctivæ, contraction of the pupils, and vomiting were absent.

2. *Case 2 x. y. aged 34*, English Resident in the east  $5\frac{1}{2}$  years, and for three months in Penang. The history on admission was that for about a month he had had attacks of fever coming on daily about 3 P. M. and subsiding about 10 or 11 P. M. with profuse sweats. When the fever came on, there was some headache but at other times he felt fairly well, except for weakness and loss of appetite. Chart II shows his temperature while in hospital and it will be seen that quinine both by mouth and hypodermically had very little effect. Except for a loud systolic bruit, said to be congenital, there were no physical signs in the chest or abdomen. The bowels at first were loose and the motions bright-yellow and offensive, but, after a few days on milk diet there was constipation. Repeated microscopical examination of the blood showed no evidence of malaria. After nearly seven weeks in Hospital he was sent to England, and was reported to be much better for the change, although during a few days of exceptional heat his temperature was said to have run up to  $101^{\circ}$  or  $102^{\circ}$  in the evenings.

Some weeks later still the only thing to trouble him was said to be occasional attacks of rheumatism in the joints of the foot with some pain and swelling for a day or two, and then complete disappearance. In some respects malaria having been excluded, this case also suggests Malta Fever or some fever much allied to it, and it is unfortunate that there were no cultures of the micrococcus militensis available for performing the serum test. Malta fever appears to have a much wider distribution than was formerly supposed. It has been proved to occur both in China and India, although so far it does not appear to have been recorded with certainty in the Straits.

TABLE A-1.

*General Hospital, Singapore.*

1902.	Remaining 31st Dec., 1901.	Admitted 1902.	Total Treated.	Discharged.	Transferred.	Absconded.	Died.	Remaining 31st Dec., 1902.	Percentage of deaths to total treated
European Wards	30	682	712	619	8	3	46	36	6.460
Natives ...	65	2,571	2,636	1,827	148	280	298	83	11.305
Native Police ..	15	397	412	373	Nil	26	3	10	0.728
Totals ...	110	3,650	3,760	2,819	156	309	347	129	9.228

TABLE A-2.

*Table shewing the average daily number of the Police Force attending  
during each month of the year at the out-patient room.*

	1899	1900	1901	1902
January ...	32.72	17.69	14.12	12.9
February ...	23.95	18.33	12.55	11.7
March ...	29.76	18.15	13.73	11.1
April ...	28.04	18.02	14.86	17.1
May ...	28.57	19.01	12.34	17.3
June ...	25.65	22.64	12.33	17.7
July ...	23.03	18.72	11.77	15.
August ...	22.37	18.97	12.65	12.05
September ...	28.65	16.04	13.08	14.
October ...	29.19	21.93	12.66	14.1
November ...	26.65	21.50	13.2	14.1
December ...	25.84	18.91	13.08	16.2



TABLE A-3.

*Table shewing the diseases of those sent to Hospital Singapore Police Force.*

Fever including remittent and intermittent	...	...	83
Dysentery	...	...	21
Diarrhœa	...	...	29
Rheumatism	...	...	10
Pulmonary tuberculosis	...	...	5
Pneumonia	...	...	6
Bronchitis	...	...	15
Asthma	...	...	2
Hepatitis	...	...	4
Skin Diseases	...	...	10
Alcoholism	...	...	2
Beri-Beri	...	...	5
Eye, Ear, and throat diseases	...	...	13
Syphilis	...	...	14
Gonorrhœa and Sequelæ	...	...	30
Wounds, Ulcers, Sprains, etc.	...	...	35
Dyspepsia, Anæmia, Debility	...	...	15
Hernia	...	...	1
Heart Disease	...	...	1
Hemiplegia	...	...	1
Facial Paralysis	...	...	1
Leprosy	...	...	1
Dengue	...	...	5
Rothelu	...	...	1
Small-pox	...	...	1
Malingering	...	...	39

TABLE A-4.

*Table giving the Analysis of Admissions of Prisoners into Hospital for the months of the year :—*

Months.	Number of Admissions.			Fresh cases.			Recurring cases.			Admitted to prison with the disease.			Deaths.		
	1900.	1901.	1902.	1900.	1901.	1902.	1900.	1901.	1902.	1900.	1901.	1902.	1900.	1901.	1902.
January	5	15	22	3	6	6	1	5	15	1	4	1	1	1	1
February	3	10	8	1	4	2	1	3	5	1	3	1	...	...	1
March	1	4	2	...	3	1	1	1	1	...	...	...	...	...	...
April	8	17	8	6	9	4	2	8	4	...	...	...	...	...	...
May	14	25	18	8	13	11	6	12	7	...	...	...	2	1	...
June	32	17	79	22	5	49	10	12	29	...	...	1	2	3	3
July	36	23	86	26	12	52	10	9	32	...	2	2	2	2	...
August	8	12	27	5	6	9	3	6	17	...	...	1	1	...	...
September	32	16	36	21	8	18	10	2	14	...	...	4	1	...	3
October	24	19	62	16	11	14	7	8	44	1	...	4	2	1	1
November	44	41	35	24	23	10	20	18	20	1	...	5	7	1	1
December	17	26	32	11	14	8	6	12	23	...	...	1	1	...	1
	224	219	415	143	114	184	77	96	211	4	9	20	28	9	11

TABLE A-5.

*Table giving the percentage of deaths due to some diseases in 1898 to 1902  
in the Tan Tock Seng's Hospital.*

		1898.	1899.	1900.	1901.	1902.
Beri-beri	...	53	58	38	47	36
Dysentery	...	61	57	61	55	41
Diarrhœa	...	72	72	63	67	58
Fever	...	15	12	20	10	22
Phthisis	...	72	72	64	63	55



TABLE A-6.

LUNATIC ASYLUM.

Beri-Beri.

Year.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Percentage of Deaths from Beri-Beri to total Deaths.	Percentage of Deaths from Beri-Beri on Average Number Resident.	Percentage of Deaths from Beri-Beri to new cases treated.	Percentage of total Deaths on Average Number Resident.			
	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.	Deaths from Beri-Beri.	Total Deaths.							
1896	3	9	8	13	6	12	3	6	4	5	1	8	4	6	2	6	3	5	4	8	5	11	2	5	40	85	233	47.06	17.12	...	36.48
1897	3	4	4	5	6	10	5	9	4	7	3	8	2	6	2	3	4	6	7	8	3	6	5	9	48	81	228	59.26	21.06	...	35.52
1898	2	7	3	7	3	5	4	14	6	6	10	7	4	4	7	10	5	10	9	9	4	7	4	6	55	95	208	57.89	26.44	35.48	45.67
1899	2	3	...	3	1	4	2	3	8	12	5	1	3	10	9	9	4	4	3	5	2	7	2	7	29	65	184	44.60	15.76	23.96	35.32
1900	...	3	1	7	2	7	3	7	3	5	12	8	6	10	8	17	5	13	7	8	4	24	8	11	51	123	180	41.46	28.30	33.33	68.3
1901	...	2	...	2	...	1	...	2	6	6	4	1	2	2	9	12	...	6	...	...	1	3	...	4	15	56	164	26.79	9.15	14.70	34.1
1902	...	1	...	5	...	3	...	5	...	3	5	...	1	1	...	2	...	3	2	2	2	9	1	3	4	42	174	9.52	2.3	4.04	24.14

New cases of Beri-Beri and months in which they occurred.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1898	19	4	19	14	21	18	5	16	9	12	13	5	155
1899	8	6	8	10	14	21	4	5	17	13	7	8	121
1900	21	11	20	14	17	20	10	8	11	7	4	10	153
1901	11	15	10	5	9	7	12	7	3	6	10	7	102
1902	14	14	11	3	2	2	9	5	6	19	6	8	99

TABLE I.

*Table shewing the Admissions, Discharges, and Deaths during the year 1902.*

	Male.	Female.	Total.	Male.	Female.	Total.
In the Asylum on 1st January, 1902 ...				127	45	172
Cases admitted :—						
First Admissions ...	129	14	143			
Not first Admissions ...	14	2	16			
				143	16	159
Total Cases under care during the year				270	61	331
Cases discharged :—						
Recovered ...	82	8	90			
Relieved ...	11	1	12			
Not relieved ...	1	1	2			
Absconded ...	5	1	6			
Died ...	38	4	42			
Total Cases discharged and died during the year ...				137	15	152
Remaining in the Asylum on 31st December, 1902 ...				133	46	179
Average Number resident during the year				130	44	174

TABLE II.

*Table shewing the Admissions, Re-Admissions, Discharges and Deaths from 31st December, 1888, to 31st December, 1902.*

	Male	Female.	Total.	Male.	Female.	Total.
Remaining on the 31st December, 1888				176	32	208
Persons admitted during the period ...				2,079	339	2,418
Re-Admissions ...				222	47	269
Total cases treated ...				2,477	418	2,895
Discharged cases :—						
Recovered ...	960	134	1,094			
Relieved ...	230	50	280			
Not Improved ...	68	27	95			
Absconded ...	64	7	71			
Died ...	1,022	154	1,176			
Total cases discharged and died since the 31st of December, 1888 ...				2,344	372	2,716
Remaining in Asylum on 31st December, 1902 ...				133	46	179



TABLE III.

Table shewing the Admissions, Discharges and Deaths, with the Mean Annual Mortality and Proportion of Recoveries per cent. on the Admissions for the years 1886 to 1902 inclusive.

YEAR.	Admitted.			Discharged.						Ab-sconded.			Died.			Remaining on 31st December of each year.			Average Number resident.			Percentage of Recoveries on Admissions.			Percentage of Deaths on the Average Number resident.		
	Admitted.			Re-covered.			Re-lieved.			Not improved.			Died.			Remaining on 31st December of each year.			Average Number resident.			Percentage of Recoveries on Admissions.			Percentage of Deaths on the Average Number resident.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1886	...	...	164	...	...	...	...	...	...	...	...	...	49	10	59	169	23	192	...	...	176	...	...	...	...	...	33.52
1887	173	17	190	...	...	...	...	...	...	...	...	37	73	4	77	178	29	207	...	...	210	...	...	...	39.89	14.81	36.49
1888	153	23	176	35	9	44	5	2	7	...	...	29	84	8	92	176	32	208	...	...	225	22.97	39.28	25.00	43.97	25.00	40.70
1889	186	24	210	67	6	73	13	4	17	...	...	5	74	6	80	196	40	236	...	...	237	36.02	25.00	34.76	36.69	17.14	33.37
1890	224	30	254	87	7	94	23	1	24	...	...	6	145	11	156	157	48	205	...	...	227	38.83	23.33	37.00	77.40	38.18	69.72
1891	162	30	192	61	13	74	12	3	15	...	...	6	76	11	87	161	49	210	...	...	200	37.65	43.33	38.54	49.67	23.40	43.50
1892	158	29	187	71	14	85	15	4	19	...	...	7	43	14	57	179	43	222	...	...	214	44.94	48.27	45.45	25.29	31.82	26.63
1893	184	33	217	65	7	72	8	5	13	...	...	2	43	5	48	240	53	293	...	...	254	35.32	21.21	33.17	20.97	10.20	18.89
1894	169	29	198	69	11	80	21	4	25	...	...	3	73	16	89	239	48	287	...	...	296	40.83	37.93	40.41	29.92	30.77	30.07
1895	173	34	207	70	9	79	45	10	55	...	...	10	99	13	112	180	46	226	...	...	252	40.40	26.47	38.16	48.06	28.26	44.42
1896	202	28	230	86	16	102	7	2	9	...	...	3	79	6	85	205	49	254	...	...	233	42.57	57.14	44.35	43.17	12.00	36.48
1897	122	26	148	62	9	71	18	7	25	...	...	2	72	9	81	171	50	221	...	...	228	50.82	34.61	47.97	39.77	19.15	33.52
1898	137	24	161	61	7	68	16	3	19	...	...	4	85	10	95	125	48	173	...	...	208	44.52	29.17	42.24	54.49	19.23	45.67
1899	130	32	162	51	12	63	14	3	17	...	...	7	56	9	65	123	55	178	...	...	184	39.23	37.81	38.8	42.75	16.98	35.32
1900	157	30	187	54	5	59	9	1	10	...	...	4	93	30	123	118	47	165	...	...	180	34.39	16.6	31.02	72.66	57.69	68.3
1901	154	21	175	74	10	84	18	2	20	...	...	6	46	10	56	127	45	172	...	...	164	43.51	47.62	48.00	38.98	21.52	34.15
1902	143	16	159	82	8	90	11	1	12	...	...	6	38	4	42	133	46	179	...	...	174	57.34	50.00	56.60	29.23	9.09	24.14

TABLE V.

Shewing the Causes of Deaths, during the year 1902, together with the Ages at Death.

CAUSES OF DEATH.		15 and under 20 years.		20 and under 25 years.		25 and under 30 years.		30 and under 35 years.		35 and under 40 years.		40 and under 45 years.		45 and under 50 years.		50 and under 55 years.		55 and under 60 years.		60 and under 65 years.		65 and under 70 years.		70 and under 75 years.		75 and under 80 years.		TOTAL.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
GENERAL DISEASES.																													
Cholera	...	...	...	2	...	2	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	6
Dysentery	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1
Beri-beri	...	...	...	...	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4
Septicæmia	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CEREBRO-SPINAL DISEASES.																													
Acute Brain disease	...	...	...	2	...	2	...	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5
Chronic Brain Disease	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	2	2	2
Syphilitic Brain Disease	...	...	...	...	...	...	...	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3
Apoplexy	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
THORACIC DISEASES.																													
Pneumonia	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	2	2	2
Pulmonary Tuberculosis	...	...	1	2	1	3	2	2	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	3	11
ABDOMINAL DISEASES.																													
Abscess of liver	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
Cancer of left kidney	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	...	1	1	2	9	2	11	4	4	10	1	11	6	6	5	...	...	2	...	2	1	...	...	...	...	...	38	4	42



TABLE VI.

*Table shewing the Length of Residence of those discharged recovered, and of those who died, during the year 1902.*

Length of Residence.							Recovered.			Died.		
							Male.	Female.	Total.	Male.	Female.	Total.
Under 1 month				...	...	...	11	...	11	11	1	12
From 1 to 3 months				...	...	...	25	1	26	7	...	7
" 3 " 6 "				...	...	...	20	1	21	4	...	4
" 6 " 9 "				...	...	...	7	1	8	7	1	8
" 9 " 12 "				...	...	...	2	1	3	2	...	2
" 1 " 2 years				...	...	...	17	2	19	3	1	4
" 2 " 3 "				...	...	...	...	2	2	1	1	2
" 3 " 5 "				...	...	...	...	...	...	...	...	...
" 5 " 7 "				...	...	...	...	...	...	1	...	1
" 7 " 10 "				...	...	...	...	...	...	...	...	...
" 10 " 15 "				...	...	...	...	...	...	2	...	2
" 15 " 25 "				...	...	...	...	...	...	...	...	...
Total ...							82	8	90	38	4	42

TABLE X-a.

Table shewing the probable Causes, apparent or assigned, of the Disorders in the Admissions, Discharges and Deaths of the year 1902.

CAUSES.	ADMISSIONS.											
	No. of Instances in which a Cause was assigned.											
	Admissions:—Male, 143. Female, 16. Total, 159.											
	As predisposing Cause.			As exciting Cause.			As predisposing or exciting Cause. †			Total. *		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic troubles (including loss of relatives and friends) ...	...	...	...	4	...	4	...	...	...	4	...	4
Adverse circumstances (including business anxieties and pecuniary difficulties) ...	...	...	...	3	...	3	...	...	...	3	...	3
Mental anxiety and worry and overwork ...	...	...	...	...	...	...	...	...	...	...	...	...
Religious excitement ...	...	...	...	...	...	...	...	...	...	...	...	...
Love affairs (including seduction) ...	...	...	...	...	...	...	...	...	...	...	...	...
Fright and nervous shock ...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Physical.</i>												
Intemperance in drink ...	...	...	...	15	...	15	...	...	...	15	...	15
Venereal disease ...	1	1	2	5	...	5	12	...	12	18	1	19
Self-abuse ...	...	...	...	...	...	...	...	...	...	...	...	...
Sunstroke ...	...	...	...	...	...	...	...	...	...	...	...	...
Accident or injury ...	...	...	...	3	...	3	...	...	...	3	...	3
Pregnancy ...	...	1	1	...	...	...	...	...	...	...	1	1
Parturition and the puerperal state ...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine and ovarian disorders ...	...	...	...	...	...	...	...	...	...	...	...	...
Lactation ...	...	...	...	...	...	...	...	...	...	...	...	...
Puberty ...	...	...	...	2	...	2	...	...	...	2	...	2
Epilepsy ...	...	1	1	...	...	...	1	1	2	1	2	3
Privation and starvation ...	...	...	...	1	...	1	...	...	...	1	...	1
Heart disease ...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis ...	...	...	...	...	...	...	7	1	8	7	1	8
Malarial fever ...	...	...	...	5	...	5	...	...	...	5	...	5
Typhoid fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Other bodily diseases or disorders	15	2	17	...	...	...	...	...	...	15	2	17
Previous attacks ...	19	2	21	...	...	...	...	...	...	19	2	21
Old age ...	6	...	6	...	...	...	...	...	...	6	...	6
Opium smoking ...	...	...	...	...	...	...	...	...	...	...	...	...
Hereditary influences ...	2	...	2	...	...	...	...	...	...	2	...	2
Congenital defect ...	...	...	...	...	...	...	...	...	...	...	...	...
Indian hemp smoking ...	...	...	...	2	...	2	...	...	...	2	...	2
Unknown ...	...	...	...	...	...	...	...	...	...	61	9	70

\* Some of the discharges are credited with more than one cause ; therefore, the sum of the "known" and "unknown" causes exceeds that of the admissions.  
† Where these could not be distinguished.



TABLE X-b.

Table shewing the probable Causes, apparent or assigned, of the Disorders, in the Admissions, Discharges and Deaths of the year 1902.—Continued.

CAUSES.	DISCHARGES.											
	No. of Instances in which a Cause was assigned.											
	Discharges :—Male, 94. Female, 10. Total, 104.											
	As predisposing Cause.			As exciting Cause.			As predisposing or exciting Cause.†			Total.*		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic troubles (including loss of relatives and friends) ...	...	...	...	4	...	4	...	...	...	4	...	4
Adverse circumstances (including business anxieties and pecuniary difficulties) ...	...	...	...	3	1	4	...	...	...	3	1	4
Mental anxiety and worry and overwork ...	...	...	...	...	...	...	...	...	...	...	...	...
Religious excitement ...	...	...	...	...	...	...	...	...	...	...	...	...
Love affairs (including seduction) ...	...	...	...	...	...	...	...	...	...	...	...	...
Fright and nervous shock ...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Physical.</i>												
Intemperance in drink ...	...	...	...	18	...	18	...	...	...	18	...	18
Venereal disease ...	7	...	7	1	...	1	...	...	...	8	...	8
Self-abuse ...	...	...	...	...	...	...	...	...	...	...	...	...
Sunstroke ...	...	...	...	...	...	...	...	...	...	...	...	...
Accident or injury ...	...	...	...	1	...	1	...	...	...	1	...	1
Pregnancy ...	...	2	2	...	...	...	...	...	...	...	2	2
Parturition and the puerperal state ...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine and ovarian disorders ...	...	...	...	...	...	...	...	...	...	...	...	...
Puberty ...	...	...	...	1	...	1	...	...	...	1	...	1
Epilepsy ...	1	1	2	...	...	...	...	...	...	1	1	2
Privation and starvation ...	...	...	...	1	...	1	...	...	...	1	...	1
Heart disease ...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis ...	...	...	...	...	...	...	...	...	...	...	...	...
Malarial fever ...	...	...	...	13	...	13	...	...	...	13	...	13
Typhoid fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Other bodily diseases or disorders ...	...	...	...	...	...	...	...	...	...	...	...	...
Previous attacks ...	17	...	17	...	...	...	...	...	...	17	...	17
Old age ...	...	...	...	...	...	...	...	...	...	...	...	...
Opium smoking (Morphia Habit)...	...	...	...	...	...	...	...	...	...	...	...	...
Hereditary influences ...	2	...	2	...	...	...	...	...	...	2	...	2
Congenital defect ...	...	...	...	...	...	...	...	...	...	...	...	...
Indian hemp smoking ...	...	...	...	2	...	2	...	...	...	2	...	2
Unknown ...	...	...	...	...	...	...	...	...	...	36	6	42

\* Some of the admissions are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the discharges.

† Where these could not be distinguished.

TABLE X-c.

*Shewing the probable Causes, apparent or assigned, of the Disorders, in the Admissions, Discharges and Deaths of the year 1902—Continued.*

CAUSES.	DEATHS.											
	No. of Instances in which a Cause was assigned.											
	Deaths:—Male, 38. Female, 4. Total, 42.											
	As predisposing Cause.			As exciting Cause.			As predisposing or exciting Cause. †			Total. *		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic troubles (including loss of relatives and friends) ...	...	...	...	...	...	...	...	...	...	...	...	...
Adverse circumstances (including business anxieties and pecuniary difficulties) ...	...	...	...	...	...	...	...	...	...	...	...	...
Mental anxiety and worry and overwork ...	...	...	...	...	...	...	...	...	...	...	...	...
Religious excitement ...	...	...	...	...	...	...	...	...	...	...	...	...
Love affairs (including seduction) ...	...	...	...	...	...	...	...	...	...	...	...	...
Fright and nervous shock ...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Physical.</i>												
Intemperance in drink ...	...	...	...	3	...	3	...	...	...	3	...	2
Venereal disease ...	2	...	2	2	...	2	2	...	2	6	...	6
Self-abuse ...	...	...	...	...	...	...	...	...	...	...	...	...
Sunstroke ...	...	...	...	...	...	...	...	...	...	...	...	...
Accident or injury ...	...	...	...	...	...	...	...	...	...	...	...	...
Pregnancy ...	...	...	...	...	...	...	...	...	...	...	...	...
Parturition and the puerperal state ...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine and ovarian disorders ...	...	...	...	...	...	...	...	...	...	...	...	...
Puberty ...	...	...	...	...	...	...	...	...	...	...	...	...
Epilepsy ...	...	...	...	...	...	...	...	...	...	...	...	...
Privation and starvation ...	...	...	...	...	...	...	...	...	...	...	...	...
Heart disease ...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis ...	...	...	...	...	...	...	5	2	7	5	2	7
Malarial fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Other bodily diseases or disorders ...	...	...	...	...	...	...	7	...	7	7	...	7
Previous attacks ...	2	...	2	...	...	...	...	...	...	2	...	2
Old age ...	1	...	1	...	...	...	...	...	...	1	...	1
Opium smoking ...	...	...	...	...	...	...	...	...	...	...	...	...
Hereditary influences ...	...	...	...	...	...	...	...	...	...	...	...	...
Congenital defect ...	...	...	...	...	...	...	...	...	...	...	...	...
Indian hemp smoking ...	...	...	...	...	...	...	...	...	...	...	...	...
Unknown ...	...	...	...	...	...	...	...	...	...	18	3	21

\* Some of the deaths are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the deaths.

† Where these could not be distinguished.



TABLE XI.

Shewing the Form of Mental Disorder on Admissions, Recoveries and Deaths, of the year 1902, and the Form of Mental Disorder of the Inmates on 31st December, 1902.

FORM OF MENTAL DISORDER.		Admissions.			Recoveries.			Deaths.			Remaining in Asylum.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Congenital or Infantile Deficiency with Epilepsy	Do.	...	...	...	...	...	...	...	...	...	...	...	...
Do. do.	do.	2	...	2	...	...	...	...	1	1	5	1	1
Epilepsy acquired	...	1	2	3	1	1	2	...	...	...	2	3	5
General Paralysis of the Insane	...	...	...	...	...	...	...	...	...	...	...	...	...
Mania, Acute	...	90	8	98	48	6	54	22	1	23	41	7	48
Do. Do. Delirious	...	2	...	2	...	...	...	2	...	2	...	...	...
Do. Chronic	...	4	1	5	1	...	1	1	...	1	16	9	25
Do. Recurrent	...	...	...	...	2	...	2	...	...	...	...	1	1
Do. A Potu	...	11	...	11	14	...	14	1	...	1	...	...	...
Do. Puerperal	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. Senile	...	10	...	10	5	...	5	2	...	2	2	1	3
Melancholia, Acute	...	8	5	13	3	1	4	2	1	3	11	1	12
Do. Chronic	...	1	...	1	2	...	2	3	...	3	4	1	5
Do. Recurrent	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. A Potu	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. Puerperal	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. Senile	...	...	...	...	...	...	...	...	...	...	...	...	...
Dementia, Primary	...	...	...	...	1	...	1	...	...	...	...	...	...
Do. Secondary	...	10	...	10	...	...	...	5	1	5	1	1	2
Do. Senile	...	1	...	1	1	...	1	...	...	...	45	16	61
Do. Organic	...	...	...	...	...	...	...	...	...	...	6	3	9
Not Insane on Admission	...	3	...	3	4	...	4	...	...	...	...	...	...
Delirium from Fever	...	...	...	...	...	...	...	...	...	...	1	...	...
Total	...	143	16	159	82	8	90	38	4	42	133	46	179

TABLE XIII.  
Showing Occupation of Admissions.

OCCUPATION.	Male.	Female.	Total.	OCCUPATION.	Male.	Female.	Total.
				<i>Brought forward ...</i>	61	13	74
Ayah ... ..	...	1	1	Immigrant ...	1	...	1
Blacksmith ...	1	...	1	Joss stick maker ...	1	...	1
Bellringer ...	1	...	1	Lime washer ...	1	...	1
Boatswain ...	1	...	1	Mendicant ...	4	1	5
Boatsman ...	5	...	5	Master-mariner ...	1	...	1
Bill collector ...	1	...	1	No occupation ...	1	...	1
Bullock cart driver ...	4	...	4	Petty trader ...	5	...	5
Brick-layer ...	1	...	1	Poultry breeder ...	1	...	1
Barber ...	1	...	1	Planter, coconut ...	1	...	1
Constable, Police ...	2	...	2	Planter, gambier ...	1	...	1
Coolie, Shop ...	2	...	2	Planter, pineapple ...	1	...	1
Coolie, Plantation ...	3	...	3	Pig breeder ...	1	...	1
Clerk ...	5	...	5	Peon ...	2	...	2
Cook ...	2	...	2	Pile driver ...	1	...	1
Carpenter ...	6	...	6	Prostitute ...	...	2	2
Cake-seller ...	1	...	1	Quack Medical ...	1	...	1
Domestic ...	5	2	7	Rattan worker ...	1	...	1
Day labourer ...	5	...	5	Rikisha puller ...	2	...	2
Dyer ...	1	...	1	Rubbish carrier ...	1	...	1
Engine driver ...	1	...	1	Sawyer ...	1	...	1
Engineer ...	1	...	1	Sailor ...	6	...	6
Fruit seller ...	1	...	1	Tub maker ...	2	...	2
Fortune teller ...	1	...	1	Tailor ...	2	...	2
Fireman ...	1	...	1	Telegraph operator ...	1	...	1
Fish seller ...	1	...	1	Unknown ...	39	...	39
Grass cutter ...	2	...	2	Wood cutter ...	2	...	2
Gardener ...	1	...	1	Watchmaker ...	1	...	1
Hawker ...	5	...	5	Watchman ...	1	...	1
Housewife ...	...	10	10				
<i>Carried forward ...</i>	61	13	74	<i>Total ...</i>	143	16	159



TABLE XIII.

*Nationalities of the patients remaining in the Asylum on 31st December, 1902.*

Nationalities.				Male.	Female.	Total.
Irish	...	...		1	...	1
Russian	...	...		1	...	1
Eurasian	...	...		10	4	14
American	...	...		1	...	1
Jew	...	...		1	...	1
Chinese	Hokien	...		25	3	28
	Teo-Chew	...		23	7	30
	Macao	...		18	15	33
	Keh	...		21	...	21
	Hylam	...		4	1	5
	Laichew	...		4	...	4
Malay	...	...		1	5	6
Javanese	...	...		3	1	4
Boyonese	...	...		1	...	1
Manila	...	...		1	...	1
Arab	...	...		2	1	3
Siamese	...	...		...	1	1
Tamil	...	...		11	7	18
Bengali	...	...		3	...	3
Sikh	...	...		1	...	1
Buggis	...	...		1	...	1
Japanese	...	...		...	1	1
Total ...				133	46	179

TABLE B-2

*Table giving the number of admissions and deaths for the past 5 years  
in the General Hospital, Penang.*

	1898.			1899.			1900.			1901.			1902.		
	Admitted.	Died.	Percentage.	Admitted.	Died.	Percentage.	Admitted.	Died.	Percentage.	Admitted.	Died.	Percentage.	Admitted.	Died.	Percentage.
Europeans	128	15	11.71	172	13	7.38	236	12	4.89	173	10	5.52	178	14	7.86
Natives	948	48	5.00	901	64	6.90	1,261	119	9.11	1,294	94	6.96	1,173	95	8.01
Native Police	332	...	...	465	4	0.84	656	3	0.45	554	3	0.52	570	7	1.21
Total ...	1,408	63	4.47	1,538	81	5.13	2,153	134	6.04	2,021	107	5.29	1,927	116	6.01

TABLE B-3

*Table shewing the admissions, daily average and percentage of deaths  
in the General Hospital, Penang.*

		Remained.	Admitted.	Discharged.	Absconded.	Died.	Remained.	Average daily sick.	Percentage of deaths to total treated.	Died within 24 hours.
Europeans	...	7	178	105	...	14	4	7.36	7.56	1
Natives	...	32	1,173	1,054	10	95	38	38.01	7.88	10
Native Police	...	6	576	557	1	7	11	17.40	1.20	...
Total	...	45	1,927	1,776	11	116	53	62.77	5.88	11

TABLE B-4.

*Table shewing admissions and deaths from the principal diseases for the past four years  
Pauper Hospital Penang.*

Diseases.			1899.			1900.			1901.			1902.		
			Cases treated.	Deaths.	Percentage.	Cases treated.	Deaths.	Percentage.	Cases treated.	Deaths.	Percentage.	Cases treated.	Deaths.	Percentage.
Remittent Fever	...	...	30	17	56.66	88	43	48.86	135	68	50.37	62	39	62.90
Beri-beri	...	...	268	78	29.10	406	98	24.13	424	134	31.60	382	121	31.67
Dysentery	...	...	154	70	45.45	248	105	42.33	138	56	40.57	101	56	55.44
Diarrhoea	...	...	194	118	60.82	247	142	57.48	431	219	50.81	481	250	51.97
Debility	...	...	179	30	16.75	133	43	32.33	246	63	25.60	168	79	47.02
Tub. Phthisis...	...	...	150	97	64.66	175	111	63.42	158	95	60.12	234	110	47.00
Anæmia	...	...	207	91	43.96	230	111	48.26	210	54	25.71	249	5	3.35
Secondary syphilis	...	...	482	33	6.84	442	55	12.66	567	38	6.70	507	32	6.31
Total cases treated and deaths	...	...	3,488	693	19.86	3,847	890	23.13	4,415	839	19.00	4,055	814	20.07



TABLE B-5.

*Table showing the admissions and Deaths, Pauper Hospital, Penang, of Beri-beri for the year 1902.*

Nationalities.	January.		February.		March.		April.		May.		June.		July.		August.		Septem-ber.		October.		Novem-ber.		Decem-ber.		Total.	
	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.	Admitted.	Deaths.
Chinese	54	15	35	9	23	10	27	11	28	13	22	19	14	10	9	4	22	5	17	9	22	4	30	9	303	118
Klings	...	...	2	..	3	..	2	1	2	2	2	..	..	..	..	..	..	...	...	...	...	...	...	11	3	
Rainfall.	...	1'01	2'68	5'94	10'62	5'42	7'78	2'30	6'69	11'55	9'52	9'90	12'52	85'93												

TABLE B-6.

*Return shewing the Admissions and deaths of the Leper Asylum, Pulau Jerejak for the years 1890 to 1902.*

Year.	Remained from previous year.	Admission.		Total.	Deaths.	Percentage of deaths to total treated.	Remarks.	
		Col.	Perak.					
1890	160	137	129	326	91	27.91	Average Daily	183.33
1891	221	132	...	353	123	34.84	Do.	195.07
1892	187	178	110	475	122	25.68	Do.	282.96
1893	310	118	4	432	87	20.13	Do.	307.80
1894	321	111	60	492	129	26.21	Do.	311.18
1895	332	121	34	487	146	29.97	Do.	313.06
1896	301	145	24	470	136	28.93	Do.	303.37
1897	286	152	...	438	130	29.68	Do.	278.64
1898	253	152	16	421	123	29.21	Do.	262.10
1899	247	123	20	390	142	36.41	Do.	239.15
1900	214	97	59	370	115	31.08	Do.	214.15
1901	233	80	29	342	88	25.73	Do.	233.35
1902	235	84	33	352	73	20.73	Do.	243.27

TABLE B-7.

*Table shewing deaths reported for the past three years, Dindings.*

District.		1900.	1901.	1902.
Lumut	...	63	65	97
Pangkor	...	29	29	53
Bruas...	...	33	20	36

SMALL-POX TABLE D-1.

*Monthly Incidence.*

June, 1902	3 cases	November, 1902	19 cases
July	9 "	December	5 "
August	6 "	January, 1903	31 "
September	4 "	February	3 "
October	11 "		

*Races.*

Malays	58
Chinese	23
Klings	9
Eurasians	1

*Age Incidence and Mortality.*

Age	Cases	Deaths	Mortality
1 year and under	10	6	60 o/o
1 5 years	4	1	25 "
5 10 "	10	2	20 "
10 15 "	18	4	22 "
15 30 "	40	14	35 "
Over 30 "	9	4	44 "
Amongst vaccinated	78	24	30 "
Amongst non-vaccinated	13	7	53 "



## Singapore.

*Return of the Statistics of Population for the year 1902.*

	Europeans.	Eurasians.	Malays.	Chinese.	Tamil.	Other Nationalities	Total.
Number of inhabitants in 1902 ...	3,902	4,191	36,091	170,250	1,8060	2,807	235,301 Estimated.
„ Births during the year 1902	83	142	1,348	2,844	362	73	4,852
„ Deaths „ „ 1902	84	112	1,716	9,655	767	151	12,485
„ Immigrants „ 1902	{	No	avail	lable	data.		
„ Emigrants „ 1902							
Number of inhabitants in 1901 ...	3,840	4,134	36,082	165,275	17,870	2,695	229,896
Increase or ... ..	62	57	9	4,975	190	112	5,405
Decrease ... ..	...	...	...	...	...	...	...

Race or nationality should be specified, as nearly as possible, in accordance with the above model.

*Meteorological return for the year 1902.*

		Temperature.						Rainfall.		Winds.		Remarks.
		Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January ... ..	...	131'2	69'7	84'4	71'4	13'0	77'2	17'97	84	NE	Not registered	
February ... ..	...	145'1	66'9	86'0	69'5	16'5	77'3	8'78	76	NE		
March ... ..	...	142'5	69'3	87'1	71'8	15'3	78'9	3'38	77	NE		
April ... ..	...	141'1	71'8	87'0	73'1	13'9	79'9	8'87	82	SE		
May ... ..	...	142'0	72'6	87'9	73'9	14'0	81'1	3'63	79	SE		
June ... ..	...	140'3	72'4	87'9	73'7	14'2	81'4	5'66	77	SE		
July ... ..	...	139'0	72'7	88'2	74'3	13'9	81'9	2'11	72	SSE		
August ... ..	...	139'8	71'8	88'1	73'7	14'4	81'1	4'62	75	SE		
September ... ..	...	139'9	71'6	87'6	73'1	14'5	80'5	3'47	78	SSE		
October ... ..	...	138'0	70'4	87'6	71'6	16'0	79'9	2'30	78	SE & E		
November ... ..	...	139'3	69'7	87'4	70'8	16'6	78'9	4'52	80	SE & NW		
December ... ..	...	132'9	69'5	85'9	70'8	15'1	78'2	12'21	83	SE & NW		

## SINGAPORE.

Return of Diseases and Deaths in 1902 at the following Institutions:—General, Tan Tock Seng's, Kandang Kerbau and Prison Hospitals, Quarantine Camp, Quarantine Station and Lunatic Asylum.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions	Deaths.			
GENERAL DISEASES.						
Small-pox	...	123	28	123	33	
Chicken-pox	...	18	...	18	...	
Measles	...	3	...	3	...	
Plague	...	2	2	2	...	
Dengue	2	122	...	124	1	
Influenza	...	1	...	1	...	
Mumps	...	9	...	9	...	
Diphtheria	...	3	2	3	...	
Simple Continued Fever	17	1,045	1	1,062	7	
Enteric Fever	2	217	91	219	9	
Cholera	...	979	656	979	...	
Choleraic Diarrhœa	...	26	13	26	...	
Dysentery	16	610	159	626	22	
Beri-beri	161	1,304	379	1,465	172	
Fever, Intermittent	...	889	72	889	40	
„ Remittent	13	606	120	619	25	
Malarial Cachexia	...	8	2	8	...	
Phagedœna	4	109	13	113	21	
Erysipelas	...	1	...	1	...	
Septicæmia	...	9	9	9	...	
Tetanus	...	6	5	6	...	
Tubercle	7	661	337	668	16	
Leprosy	36	72	23	108	34	
Syphilis, Primary	25	366	...	321	26	
„ Secondary	57	1,242	134	1,299	35	
Gonorrhœa	19	395	...	414	15	
Starvation	...	1	1	1	...	
Alcoholism	5	92	...	97	1	
Rheumatic Fever	...	1	...	1	...	
Rheumatism	57	195	...	252	32	
Gout	...	1	...	...	...	
Osteoarthritis	3	2	...	5	1	
New growth non malignant	...	11	1	11	1	
„ Malignant	...	10	3	10	...	
Rickets	...	1	1	1	...	
Anæmia	31	345	110	376	35	
Diabetes mellitus	...	1	...	1	1	
Debility	18	479	147	497	33	
Old Age	13	72	38	85	12	
LOCAL DISEASES.						
DISEASES OF THE NERVOUS SYSTEM.						
Neuritis	2	10	2	12	2	
Multiple Neuritis	...	13	1	13	...	
Meningitis	...	17	15	17	2	
Myelitis	...	4	3	4	...	
Primary lateral sclerosis	...	2	...	2	...	
Locomotor Atrophy	2	7	4	9	4	
Insular Sclerosis	...	3	1	3	...	
Cerebral Hæmorrhage	...	6	2	6	...	
Bubbar paralysis	...	1	...	1	...	
Apoplexy	...	3	3	3	...	
Paralysis	1	8	3	9	...	
Paraplegia	2	3	2	5	1	
Hemiplegia	6	31	5	37	10	
Local Paralysis	1	1	...	2	...	
Paralysis agitans	1	1	1	2	...	
Convulsions	...	4	4	4	...	
Epilepsy	3	16	...	19	4	
Cephalalgia	...	1	...	1	...	
Hemicrania	...	1	...	1	...	
Neuralgia	...	12	...	12	...	
Hysteria	...	1	...	1	...	
Neurasthenia	...	5	...	5	...	
Carried forward...	504	10,187	2,393	10,691	595	



## Return of Diseases and Deaths in 1902 at the Singapore Hospitals.—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	504	10,187	2,393	10,691	595	
DISEASES OF THE NERVOUS SYSTEM.—Continued.						
Idiocy ...	6	3	1	9	7	
Mania ...	65	194	26	260	74	
" delirious ...	...	2	2	2	...	
" puerperal ...	1	...	...	1	...	
" syphilitic ...	10	6	...	16	2	
" alcoholic ...	1	11	1	12	...	
" opium ...	...	2	...	2	...	
Melancholia ...	6	27	5	33	15	
Dementia ...	78	36	7	114	74	
" senile ...	2	1	...	3	3	
Delusional Insanity ...	...	7	...	7	...	
DISEASES OF THE EYE.						
Conjunctivitis ...	3	86	...	89	3	
Keratitis ...	...	8	...	8	1	
Ulcer of cornea ...	5	18	...	23	3	
Keratomalacia ...	4	1	...	5	4	
Opacity of cornea ...	4	4	...	8	3	
Staphyloma ...	3	11	...	14	3	
Iritis ...	1	8	...	9	3	
Glancoma ...	...	2	...	2	1	
Cataract ...	...	2	...	2	1	
Dislocation of lens ...	1	...	...	1	...	
Total disorganization ...	...	2	...	2	...	
Myopia ...	...	1	...	1	...	
Lachrymal abscess ...	1	...	...	1	...	
Blepharitis ...	...	4	...	4	1	
Blindness ...	...	1	...	1	...	
DISEASES OF THE EAR.						
Inflammation middle ear ...	...	11	...	11	1	
Mastoid disease ...	...	1	...	1	...	
DISEASES OF THE NOSE.						
Epistaxis ...	...	2	...	2	...	
DISEASES OF THE CIRCULATORY SYSTEM.						
Pericarditis ...	...	1	1	1	...	
Valvular Disease ...	2	39	12	41	6	
Functional disease ...	...	4	...	4	...	
Atheroma ...	...	1	...	1	...	
Fatty heart ...	...	1	1	1	...	
Syncope ...	...	2	...	2	...	
Aneurysm ...	...	5	4	5	...	
Phlebitis ...	...	6	...	6	2	
DISEASES OF THE RESPIRATORY SYSTEM.						
Laryngitis ...	1	10	...	11	1	
Bronchitis acute ...	4	52	4	56	2	
" chronic ...	...	95	...	95	4	
Bronchiectasis ...	...	1	1	1	...	
Asthma ...	...	38	2	38	...	
Hæmoptysis ...	...	4	...	4	...	
Pneumonia ...	2	94	54	96	1	
Abscess of lung ...	...	1	1	1	...	
Phthisis ...	30	7	6	37	...	
Collapse of lung ...	...	1	...	1	...	
Pleurisy ...	...	16	3	16	...	
Empyema ...	...	5	1	5	...	
<i>Carried forward...</i>	735	11,021	2,525	11,756	810	

## Return of Diseases and Deaths in 1902 at the Singapore Hospitals.—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	735	11,021	2,525	11,756	810	
DISEASES OF THE DIGESTIVE SYSTEM.						
Ulceration of Lips ...	...	1	...	1	...	
Dentition ...	...	2	...	2	...	
Caries of tooth ...	...	4	...	4	...	
Gum boil ...	...	7	...	7	...	
Sore throat ...	1	11	...	12	...	
Tonsillitis ...	...	23	...	23	...	
Gastritis ...	...	17	...	17	...	
Gastric ulcer ...	...	6	...	6	...	
Dilatation ...	...	4	...	4	1	
Dyspepsia ...	2	109	...	111	1	
Vomiting of Pregnancy ...	...	1	...	1	...	
Enteritis ...	...	33	15	33	...	
Appendicitis ...	...	1	...	1	...	
Typhlitis ...	1	...	...	1	...	
Colitis ...	1	19	...	20	...	
Perilyphlitis ...	...	5	...	5	1	
Melœna ...	...	1	1	1	...	
Psilosis ...	...	15	1	15	1	
Hernia inguinal reducible ...	...	5	...	5	...	
"    "    irreducible ...	...	1	...	1	...	
"    "    strangulated ...	1	1	1	2	...	
Obstruction of bowel ...	...	2	2	2	...	
Constipation ...	1	8	...	9	...	
Colic ...	2	31	...	33	...	
Diarrhœa ...	11	572	197	583	18	
Fistula in ano ...	1	25	...	26	...	
Stricture of rectum ...	...	1	...	1	...	
Prolapse of anus ...	...	5	...	5	...	
Piles ...	1	29	...	30	3	
Hepatitis ...	...	22	...	22	2	
Abscess ...	...	10	6	10	2	
Cirrhosis ...	3	44	28	47	2	
Perihepatitis ...	2	4	...	6	...	
Congestion of Liver ...	1	10	...	11	...	
Jaundice ...	1	9	3	10	...	
Gall stones ...	...	2	2	2	...	
Peritonitis ...	1	10	7	11	...	
"    suppurative. . .	...	1	1	1	...	
Ascites ...	...	3	...	3	1	
DISEASES OF THE LYMPHATIC SYSTEM.						
Hypertrophy of Spleen ...	1	...	...	1	...	
Inflam <sup>n</sup> . lymph glands ...	8	36	...	44	2	
Suppuration " ...	...	3	...	3	1	
Lymphangitis ...	1	4	...	5	...	
Lymphangiectasis ...	...	3	...	3	...	
Elephantiasis ...	...	3	...	3	...	
DISEASES OF THE THYROID BODY.						
Goitre ...	...	6	...	6	...	
DISEASES OF THE URINARY SYSTEM.						
Acute nephritis ...	1	6	4	7	...	
Chronic " ...	2	28	10	30	2	
Pyelitis ...	...	2	...	2	...	
Hæmaturia ...	2	...	...	2	...	
Renal colic ...	...	1	...	1	...	
Cystitis ...	...	8	1	8	...	
Calculus ...	...	5	...	5	...	
Incontinence of Urine ...	...	1	...	1	...	
<i>Carried forward...</i>	780	12,181	2,804	12,961	847	



## Return of Diseases and Deaths in 1902 at the Singapore Hospitals.—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total cases. Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	780	12,181	2,804	12,961	847	
DISEASES OF THE ORGANS OF GENERATION.						
<i>Male Organs</i>						
Urethritis	...	3	...	3	...	
Peri urethral abscess	...	1	...	1	1	
Stricture organic	...	20	...	20	1	
"    spasmodic	...	2	...	2	...	
Urethral fistula	...	8	...	8	...	
Prostatic abscess	...	1	...	1	...	
Phimosis	1	5	...	6	1	
Paraphimosis	1	3	...	4	...	
Ulcer of penis	...	10	...	10	...	
Gangrene Penis	1	1	1	2	...	
Chancroid	3	20	...	23	8	
Abscess of scrotum	...	3	...	3	...	
Sloughing of scrotum	1	4	2	5	...	
Hæmatocele	...	1	...	1	...	
Hydrocele	...	15	...	15	...	
Orchitis	1	11	...	12	2	
Epididymitis	...	1	...	1	...	
Hernia testic	...	5	...	5	2	
<i>Female organs</i>						
Oöphoritis	...	1	...	1	...	
Metritis	...	1	...	1	...	
Endometritis	...	1	...	1	...	
Ulceration os uteri	...	3	...	3	...	
Retroflexion	...	1	...	1	...	
Labial abscess	...	1	...	1	...	
Hypertrophy labia	...	1	...	1	...	
Menorrhægia	...	1	...	1	...	
DISEASES OF THE ORGANS OF LOCOMOTION.						
Periostitis	1	7	...	8	...	
Caries	...	3	...	3	...	
Necrosis	1	10	...	11	1	
Un-united fracture	...	3	...	3	...	
Synovitis	2	21	...	23	2	
Suppurative Arthritis	...	3	2	3	...	
Ankylosis	1	4	...	5	...	
Tenosynovitis	...	1	...	1	...	
DISEASES OF THE CON- NECTIVE TISSUE.						
Inflammation	1	56	1	57	2	
Abscess	18	162	5	180	15	
Gangrene	...	3	2	3	...	
DISEASES OF THE SKIN.						
Erythema	...	1	...	1	...	
Urticaria	...	5	...	5	...	
Eczema	2	70	...	72	3	
Herpes	...	6	...	6	...	
Herpes zoster	...	2	...	2	...	
Pemphigus	2	7	...	9	...	
Ulcer	85	607	...	692	90	
Boil	6	20	...	26	...	
Carbuncle	1	10	...	11	...	
Gangrene	...	6	3	6	...	
Whitlow	...	3	...	3	...	
Onychia	1	9	...	10	1	
Ingrown Toe Nail	...	1	...	1	...	
INJURIES.						
General	3	92	8	95	3	
Local	19	757	23	776	40	
<i>Carried forward...</i>	931	14,174	2,887	15,105	1,019	

*Return of Diseases and Deaths in 1902 at the Singapore Hospitals.—Concluded.*

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	931	14,174	2,851	15,105	1,019	
OPERATIONS.						
Circumcision ...	...	4	...	4	...	
Amputation of leg ...	...	2	...	2	1	
Radical cure for Hernia ...	...	1	...	1	...	
POISONS.						
Lead ...	...	1	...	1	...	
Mercury ...	...	8	...	8	...	
Belladonna ...	...	1	...	1	...	
Cinchona ...	...	1	...	1	...	
Opium ...	...	14	3	14	1	
HUMAN PARASITES.						
Ascaris Lumbricoides ...	...	4	...	4	...	
Filaria sanguinis hominis ...	1	6	...	7	...	
„ Medinensis ...	...	1	...	1	...	
Ancylostomum duodenale ...	...	4	1	4	...	
Sarcoptes scabiei ...	1	90	...	91	2	
Tinea tonsurans ...	7	10	...	17	1	
„ Imbricata ...	...	2	...	2	...	
Parturition ...	...	1	...	1	...	
Observation ...	4	177	...	181	2	
No discoverable disease ...	...	5	...	5	...	
Grand total...	944	14,506	2,855	15,450	1,026	



	Europeans.	Eurasians.	Malays.	Chinese.	Tamil.	Other Nationalities.	Total.	
Number of inhabitants in 1902 ...	1,004	1,675	34,102	72,330	18,600	1,751	129,462	(Estimated)
„ Births during the year 1902	19	38	1,052	956	288	26	2,379	
„ Deaths „ „ 1902	27	45	1,300	3,562	791	62	5,787	
„ Immigrants „ 1902	}	No available data						
„ Emigrants „ 1902								
Number of inhabitants in 1901 ...	993	1,649	34,286	71,463	18,740	1,699	128,830	Census 1901.
Increase or ... ..	11	26	...	867	...	52	...	
Decrease ... ..	...	...	184	...	140	...	...	

Race or nationality should be specified, as nearly as possible, in accordance with the above model.

			Temperature.						Rainfall.		Winds.		Remarks.
			Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January	...	...	141.3	65.3	89.3	73.3	16.0	80.6	1.01	66	NW	151.12	
February	...	...	143.8	64.1	90.1	72.1	18.0	80.2	2.68	66	...	116.78	
March	...	...	146.9	64.5	91.7	73.6	18.0	81.4	5.94	69	...	91.67	
April	...	...	152.4	66.4	90.3	74.7	15.6	81.4	10.62	74	S	65.50	
May	...	...	149.8	67.4	90.6	74.8	15.8	81.2	5.42	73	...	147.74	
June	...	...	152.1	66.9	89.5	74.3	15.2	80.4	7.78	72	...	128.66	
July	...	...	152.3	67.3	90.1	73.9	16.2	81.2	2.30	69	...	125.96	
August	...	...	147.7	66.5	88.6	74.1	14.5	80.3	6.69	71	...	89.03	
September	...	...	144.6	67.1	88.5	73.8	14.7	79.8	11.55	71	N	103.10	
October	...	...	144.6	66.2	89.2	74.3	14.9	80.4	9.52	71	NW	68.80	
November	...	...	141.8	66.1	88.5	74.1	14.4	80.2	9.90	71	Calm	86.16	
December	...	...	138.6	63.2	88.3	74.2	14.1	80.2	12.52	71	NW	104.83	

## PENANG.

Return of Diseases and Deaths in 1902 at the following Institutions:—  
General, Pauper, Lock, Prison, Quarantine Camp, European Small-pox,  
Balik Pulau, Leper Asylum, and Lumut Hospitals.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
GENERAL DISEASES.						
Small-pox	...	211	45	211	10	
Chicken-pox	2	65	...	67	...	
Measles	...	21	...	21	...	
Dengue	...	19	...	19	...	
Influenza	...	...	...	...	...	
Mumps	...	4	...	4	...	
Simple continued fever	...	19	...	19	...	
Enteric Fever	...	35	15	35	1	
Unclassified fever (Malta)	...	2	...	2	...	
Cholera	...	11	10	11	...	
Choleraic Diarrhœa	...	1	...	1	...	
Dysentery	6	150	68	156	3	
Beri-beri	84	361	139	445	47	
Intermittent Fever	11	776	...	787	14	
Remittent Fever	3	88	61	91	1	
Malarial Cachexia	1	9	2	10	...	
Phagedœna	3	42	19	45	1	
Erysipelas	1	2	1	3	...	
Septicæmia	...	1	1	1	...	
„ Puerperal	...	1	...	1	...	
Tetanus	...	7	4	7	...	
Tubercle	3	2	...	5	...	
Leprosy	250	188	81	438	257	
Syphilis, Primary	4	144	...	148	20	
„ Secondary	63	546	34	609	90	
Gonorrhœa	2	61	...	63	2	
Mercurial inflammation of dental periosteum	...	2	...	2	...	
Alcoholic poisoning	...	23	...	23	1	
Opium	...	1	1	1	...	
„ Habit	...	13	...	13	...	
Alcoholism	...	14	...	14	...	
Rheumatic Fever	1	1	...	2	...	
Rheumatism	7	135	...	142	17	
Ranula	...	1	...	1	...	
Lipoma	...	1	...	1	...	
Angioma	...	1	...	1	...	
Fibroma	...	3	...	3	...	
Lymphadenoma	...	1	1	1	...	
Papilloma	...	1	...	1	...	
Urethral Caruncle	...	1	...	1	...	
Cancer	1	3	2	4	...	
„ liver	...	2	2	2	...	
Sarcoma	...	3	2	3	...	
Anæmia	21	213	38	234	10	
Purpura	...	3	1	3	...	
Diabetes mellitus	1	...	...	1	...	
Debility	7	249	86	256	17	
Old age	1	17	9	18	4	
LOCAL DISEASES.						
DISEASES OF THE NERVOUS SYSTEM.						
Neuritis	1	11	1	12	1	
„ Multiple	...	1	1	1	...	
„ Alcoholic	...	3	...	3	...	
Meningitis	...	4	4	4	...	
Abscess brain	...	1	1	1	...	
Cerebral Hæmorrhage	...	5	5	5	...	
Paralysis	...	1	...	1	...	
Paraplegia	...	2	1	2	...	
Hemiplegia	3	37	2	40	7	
Paralysis agitans	...	1	...	1	...	
Infant convulsions	...	1	...	1	...	
Epilepsy	1	1	...	2	1	
Hemicrania	...	2	...	2	...	
Neuralgia	...	5	...	5	...	
Carried forward...	477	3,529	637	4,006	504	



## Return of Diseases and Deaths in 1902 at the Penang Hospitals:—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	477	3,529	637	4,006	504	
<b>DISEASES OF THE NERVOUS SYSTEM—Continued.</b>						
Mania ...	...	1	...	1	...	
Melancholia ...	...	6	...	6	...	
Dementia ...	9	86	...	95	15	
Idiocy ...	...	1	...	1	...	
<b>DISEASES OF THE EYE.</b>						
Ophthalmia catarrhal ...	...	132	...	132	8	
" Purulent ...	...	51	...	51	11	
Pterygium ...	...	1	...	1	...	
Keratitis ...	3	5	...	8	...	
Ulcer of Cornea ...	1	11	...	12	...	
Opacity " ...	...	1	...	1	...	
Staphyloma ...	...	6	...	6	2	
Iritis ...	1	10	...	11	1	
Glancoma ...	...	1	...	1	1	
Atrophy and degeneration of optic nerve ...	...	1	...	1	1	
Cataract ...	...	10	...	10	...	
Panophthalmitis ...	...	1	...	1	...	
Amblyopia ...	8	8	...	16	6	
Amaurosis ...	2	8	...	10	5	
Stye ...	1	1	...	2	...	
<b>DISEASES OF THE EAR.</b>						
Inflammation, external meatus ...	...	3	...	3	...	
Suppuration middle ear ...	...	2	...	2	...	
Accumulation of wax ...	...	1	...	1	...	
<b>DISEASES OF THE NOSE</b>						
Ozana ...	...	1	...	1	...	
<b>DISEASES OF THE CIRCULATORY SYSTEM.</b>						
Pericarditis ...	...	2	2	2	...	
Valvular disease aortic ...	1	5	4	6	...	
" " mitral ...	1	6	2	7	...	
Aneurysm abd. aorta ...	...	1	...	1	...	
" Popliteal ...	...	3	...	3	1	
<b>DISEASES OF THE RESPIRATORY SYSTEM.</b>						
Bronchitis acute ...	...	28	...	28	...	
" chronic ...	1	20	...	21	1	
" Catarrhal ...	...	2	...	2	...	
Asthma ...	1	34	...	35	3	
Pneumonia ...	1	25	10	26	2	
Tubercular Phthisis ...	9	284	135	293	18	
Hæmoptysis ...	...	1	...	1	...	
Pleurisy ...	1	9	1	10	1	
<b>DISEASES OF THE DIGESTIVE SYSTEM.</b>						
Stomatitis ...	...	3	...	3	...	
Ulcer of gum ...	...	1	...	1	...	
Caries, tooth ...	...	2	...	2	1	
Sore throat ...	...	1	...	1	...	
Pharyngites ...	...	4	...	4	...	
Gastritis ...	...	1	...	1	...	
Hæmatemesis ...	...	2	...	2	...	
Dyspepsia ...	3	94	1	97	1	
Enteritis ...	...	1	1	1	...	
<i>Carried forward...</i>	520	4,405	803	4,925	582	

## Return of Diseases and Deaths in 1902, at the Penang Hospitals :—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	520	4,405	803	4,925	582	
DISEASES OF THE DIGESTIVE SYSTEM— <i>Continued.</i>						
Appendicitis	...	2	1	2	...	
Sprue	...	1	1	1	...	
Hernia Inguinal	...	4	...	4	...	
Diarrhoea	15	627	285	642	11	
Constipation	...	23	...	23	...	
Colic	...	46	...	46	...	
Piles, external	...	8	...	8	1	
„ Internal	...	5	...	5	...	
Ulcer rectum	...	2	...	2	...	
Prolapse „	...	3	...	3	...	
Fistula in Ano	...	5	...	5	...	
Anal abscess	...	2	...	2	...	
Congestion of liver	...	3	...	3	...	
Hepatitis	1	4	1	5	1	
Jaundice	...	2	...	2	...	
Cirrhosis	3	35	14	38	4	
Abscess of liver	...	2	1	2	...	
Peritonitis	1	7	7	8	...	
DISEASES OF THE LYMPHATIC SYSTEM.						
Ague Cake	1	8	...	9	2	
Glands inflammation	3	18	...	21	...	
„ Suppuration	...	24	...	24	1	
Lymphangitis	...	1	...	1	...	
Elephantiasis	...	1	...	1	...	
DISEASES OF THE URINARY SYSTEM.						
Nephritis acute	...	3	...	3	...	
Bright's disease	6	19	7	25	2	
Renal calculus	...	1	...	1	...	
Retention urine	...	1	...	1	...	
DISEASES OF THE GENERATIVE SYSTEM.						
Stricture Urethra	1	6	1	7	...	
Urethral Fever	...	1	1	1	...	
„ Fistula	...	3	...	3	...	
Phimosis	...	1	...	1	...	
Paraphimosis	...	1	...	1	...	
Soft chancre	1	36	...	37	...	
Abscess Scrotum	...	7	...	7	...	
Sloughing Scrotum	...	7	...	7	...	
Varicocele	...	1	...	1	...	
Hydrocele	...	4	...	4	...	
Orchitis	...	10	...	10	...	
Hernia Testis	...	4	...	4	...	
<i>Female Organs.</i>						
Granular Erosion of Cervix	1	4	...	5	2	
Vaginitis	...	1	...	1	...	
Ulcer Vagina	1	...	...	1	...	
Rect. Vag. Fistula	...	2	...	2	1	
Abscess Vulva	...	1	...	1	1	
Amenorrhœa	...	1	...	1	...	
Menorrhægia	1	1	...	2	...	
Leucorrhœa	...	2	...	2	...	
DISEASES OF THE ORGANS OF LOCOMOTION,						
Caries	...	4	...	4	1	
Necrosis	1	4	1	5	...	
<i>Carried forward...</i>	556	5,363	1,122	5,919	609	



## Return of Diseases and Deaths in 1902 at the Penang Hospitals :—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	556	5,363	1,122	5,919	609	
<b>DISEASES OF THE ORGANS OF LOCOMOTION—Continued.</b>						
Synovitis ...	...	20	...	20	7	
Suppurative Arthritis ...	...	1	1	1	...	
Dis. art. cart. Knee ...	...	1	...	1	...	
Psoas Abscess ...	...	3	1	3	...	
Lumbago ...	...	1	...	1	...	
Thecal abscess ...	...	6	...	6	...	
Brusitis ...	...	2	...	2	...	
<b>DISEASES OF THE CONNECTIVE TISSUE.</b>						
Cellulitis ...	...	6	1	6	...	
Abscess ...	2	90	1	92	4	
Eczema ...	2	24	...	26	1	
Psoriasis ...	...	4	...	4	...	
Herpes ...	...	1	...	1	...	
Ulcer ...	50	516	...	566	47	
Boil ...	...	6	...	6	...	
Carbuncle ...	...	4	1	4	...	
Whitlow ...	...	3	...	3	...	
Onychia ...	...	2	...	2	...	
Tylosis ...	...	1	...	1	...	
Ringworm ...	1	6	...	7	1	
Itch ...	1	67	...	68	1	
<b>INJURIES.</b>						
<b>GENERAL</b>						
Burns and Scalds ...	...	8	...	8	1	
Multiple Injury ...	...	16	...	16	1	
Privation ...	...	3	2	3	...	
Contusion scalp ...	...	4	...	4	1	
Wound scalp ...	...	99	...	99	2	
Fracture vault of skull ...	...	3	...	3	...	
" base " " " ...	...	4	4	4	...	
Wound of skull ...	...	6	...	6	...	
Concussion of Brain ...	...	4	...	4	...	
Lac. brain without fracture ...	...	2	2	2	...	
<b>Face—</b>						
Contusion ...	...	5	...	5	...	
Wound ...	...	12	...	12	...	
<b>Mouth—</b>						
Lacerated Wound Lip ...	...	1	...	1	...	
<b>Eye—</b>						
Contusion Eyeball ...	...	1	...	1	...	
" Eyelid ...	...	1	...	1	...	
Mechan. Injury ...	...	3	...	3	...	
<b>Ear—</b>						
Wound prima ...	...	4	...	4	...	
<b>Neck—</b>						
Wound Superficial ...	...	3	...	3	...	
" of Injury of Air passage ...	...	2	1	2	...	
Rupture Machea ...	...	1	...	1	...	
<b>Chest—</b>						
Contusion ...	...	2	...	2	...	
Wound Parietes ...	...	2	...	2	1	
Penetrating Wound of Lung and pleura ...	...	4	...	4	...	
<i>Carried forward ..</i>	612	6,317	1,136	6,929	676	

## Return of Diseases and Deaths in 1902 at the Penang Hospitals:—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	612	6,317	1,136	6,929	676	
<i>INJURIES—Continued.</i>						
<i>Back—</i>						
Contusion ...	...	6	...	6	1	
Wound ...	...	3	...	3	...	
Fract. spine of chiplace- ment ...	...	1	...	1	...	
<i>Abdomen—</i>						
Contusion ...	...	1	...	1	...	
Wound of Parietes, Super- ficial ...	...	4	...	4	...	
Wound penerat ng ...	...	4	1	4	...	
„ Gunshot ...	...	1	1	1	...	
Rupture liver ...	...	1	1	1	...	
Rupture Spleen ...	...	2	2	2	...	
<i>Pelvis and Organs of Gener- ation.</i>						
Wound Perineum ...	...	1	...	1	...	
Wound Scrotum ...	1	1	...	2	...	
Rupture Urethra ...	...	2	...	2	...	
<i>Upper Extremity.</i>						
Contusion ...	...	18	...	18	...	
Sprain, wrist ...	...	2	...	2	...	
Wound ...	1	54	...	55	1	
Fracture Clavicle s. ...	...	4	...	4	...	
„ Humerus, s. ...	2	1	...	3	...	
„ „ c. ...	...	3	...	3	...	
„ Radius, s. ...	...	2	...	2	...	
„ both bones, s. ...	...	1	...	1	...	
„ Phalanges, c. ...	...	2	...	2	...	
Dislocated Radius, s. ...	...	1	...	1	...	
„ Humerus ...	...	1	...	1	...	
<i>Lower Extremity.</i>						
Contusion ...	...	18	...	18	2	
Sprain ankle ...	1	8	...	9	...	
Wound (Lacerated con- tused and incised) ...	3	68	...	71	1	
Wound Gunshot ...	...	1	...	1	...	
Alligator bite ...	...	1	...	1	...	
Dog bite ...	1	...	...	1	...	
Fracture Femur Simple ...	...	6	...	6	...	
„ Tibia ...	...	3	...	3	...	
„ „ and Fibula compound ...	...	2	...	2	...	
„ Radius and Fe- mur ...	...	1	...	1	...	
„ os calcis, com- pound ...	...	1	...	1	...	
Minor injuries ...	...	4	...	4	...	
<i>OPERATIONS.</i>						
Removal of Tumour ...	1	4	1	5	...	
For Pop. Aneurysm (Lig. of Femoral) ...	...	1	...	1	...	
For Fracture Patella ...	...	1	...	1	...	
Amputation Thigh ...	1	...	...	1	...	
„ Leg ...	1	...	...	1	...	
„ Fi ger for injury ...	...	2	...	2	...	
For Cataract ...	5	4	...	9	1	
<i>Carried forward...</i>	629	6,558	1,142	7,187	682	



*Return of Diseases and Deaths in 1902 at the Penang Hospitals :—Concluded.*

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward ..</i>	629	6,558	1,142	7,187	682	
<b>OPERATIONS. <i>Contd.</i></b>						
Excision eye-ball ...	...	1	...	1	...	
Colotomy, Inguinal ...	...	1	1	1	...	
For Strang. Hernia ...	...	2	2	2	...	
„ Radical cure Hernia ...	...	1	...	1	...	
„ Abscess liver ...	1	4	1	5	...	
„ Piles (ligative) ...	..	4	...	4	...	
„ Lithotomy(suprapubic) ..	...	2	...	2	...	
„ Castration ...	1	1	...	2	...	
„ Phimosis ...	2	8	...	10	2	
<b>PARASITES.</b>						
Ascaris lumbricoides ...	...	3	...	3	...	
No app. disease ...	50	232	...	282	40	
Observation ...	1	41	...	42	3	
Grand total...	684	6,858	1,146	7,542	727	

## Province Wellesley.

*Return of the Statistics of Population for the year 1902.*

		Europeans.	Eurasians.	Malays.	Chinese.	Tamil.	Other Nationalities	Total.
Estimated.	Number of inhabitants in 1902 ...	176	298	68,882	26,470	19,437	1,004	116,267
	" Births during the year 1902	4	11	2,623	474	578	8	3,698
	" Deaths " " 1902	1	5	1,641	856	956	17	3,476
	" Immigrants " 1902 )			No	avail	lable	data.	
	" Emigrants " 1902 )							
	Number of inhabitants in 1901 ...	167	294	68,855	26,098	19,114	933	115,461
	Increase or ... ..	9	4	27	372	323	71	806
	Decrease ... ..	...	...	...	...	...	...	...

Race of nationality should be specified as nearly as possible, in accordance with the above model.

*Meteorological Return for the year 1902.*

		Temperature.						Rainfall.		Winds.		Remarks.
		Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January	...	147'2	71'1	92'4	74'2	18'1	81'0	12	73'3	Winds not observed as no proper station.	Winds not observed as no proper station.	
February	...	150'1	70'0	94'0	74'1	19'8	81'5	5'99	68'7			
March	...	150'0	72'8	93'3	75'4	17'9	82'1	8'75	77'0			
April	...	147'7	74'3	92'4	75'3	17'0	82'0	9'31	79'6			
May	...	147'0	74'0	93'5	75'5	17'9	82'5	3'86	78'0			
June	...	144'3	73'2	93'0	74'8	18'2	82'0	7'15	78'0			
July	...	144'0	72'4	93'3	75'3	18'0	82'1	3'35	76'5			
August	...	143'6	72'6	91'4	74'8	16'4	81'7	8'93	78'6			
September	...	145'8	73'0	91'7	74'5	17'2	81'8	5'64	77'9			
October	...	143'8	72'3	90'2	72'9	17'2	80'2	19'70	80'0			
November	...	145'7	71'6	90'0	72'3	17'7	79'6	16'87	81'8			
December	...	143'3	71'7	90'8	73'0	17'1	80'2	11'40	80'2			



## PROVINCE WELLESLEY.

Return of Diseases and Deaths in 1902 at the following Institutions:—District Hospitals, Butterworth, Bukit Mertajam, and Sungei Bakap.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
GENERAL DISEASES.						
Small-pox	1	29	6	30	...	
Chickenpox	...	5	...	5	...	
Febricula	...	87	...	87	...	
Choleraic Diarrhœa	...	1	...	1	...	
Dysentery	1	35	22	36	2	
Beri-beri	10	30	7	40	5	
Intermittent Fever	1	41	3	42	...	
Remittent Fever	...	2	2	2	...	
Phagedœna Sloughing	...	1	...	1	...	
Gangrene	...	1	...	1	...	
Septicæmia	...	1	1	1	...	
Tubercle	...	12	6	12	...	
Leprosy	...	15	...	15	...	
Primary Syphilis	1	10	...	11	1	
Secondary "	2	18	...	20	...	
Tertiary "	1	24	2	25	2	
Gonorrhœa	...	7	...	7	...	
Scabies	1	21	...	22	2	
Mercurial Poisoning	...	1	...	1	...	
Starvation	1	1	2	2	...	
Alcoholism	...	1	...	1	...	
Rheumatism	4	39	...	43	6	
Rheumatoid Arthritis	...	1	...	1	...	
Gonorrhœal Rheumatism	1	...	...	1	...	
Epithelioma	...	1	...	1	...	
Sarcoma of Spine	...	1	...	1	...	
Anæmia	8	106	40	114	9	
Debility	3	49	20	52	5	
Old Age	...	3	2	3	1	
LOCAL DISEASES.						
DISEASES OF THE NERVOUS SYSTEM.						
Peripheral Neuritis	1	2	...	3	...	
Facial Paralysis	1	...	...	1	...	
Hemiplegia	1	5	2	6	...	
Neuralgia	...	1	...	1	...	
Paraplegia	...	1	1	1	...	
Lateral Sclerosis	...	3	1	3	2	
Spastic Paraplegia	...	2	...	2	...	
Myelitis	...	1	...	1	1	
Urœmic Convulsions	...	1	...	1	...	
Epilepsy	...	2	...	2	1	
Hyperæsthesia	...	6	...	6	...	
Hemicrania	...	1	...	1	...	
Hysteria	...	1	...	1	...	
Melancholia	...	2	2	2	...	
DISEASES OF THE EYE.						
Conjunctivitis	...	13	...	13	1	
Keratitis	...	1	...	1	...	
Ulcer of Cornea	...	3	...	3	...	
Opacity "	...	1	...	1	...	
Blindness	1	...	...	1	...	
Cataract	...	1	...	1	...	
DISEASES OF THE EAR.						
Inflammation Middle Ear	...	2	...	2	1	
Cystic Tumour Ear	...	1	...	1	1	
DISEASES OF THE CIRCULA- TORY SYSTEM.						
Valvular Disease Heart, Mitral	...	4	2	4	...	
" " Aortic	...	3	1	3	...	
Dilatation of Heart	...	1	1	1	...	
Tachy Cardia	...	1	1	1	...	
Carried forward	39	602	124	641	40	

*Return of Diseases and Deaths in 1902 at the Province Wellesley Hospitals.—Continued.*

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	39	602	124	641	40	
DISEASES OF THE RESPIRATORY SYSTEM.						
Laryngitis	...	1	...	1	...	
Bronchitis	2	32	...	34	2	
Asthma	1	6	...	7	...	
Congestion of Lung	...	5	...	5	1	
Pneumonia	...	13	9	13	2	
Phthisis	...	14	10	14	1	
Pleurisy	...	2	1	2	...	
DISEASES OF THE DIGESTIVE SYSTEM.						
Inflammation of Gums	...	1	...	1	...	
Sore Throat	...	1	...	1	...	
Pharyngitis	...	4	...	4	...	
Gastritis	...	3	2	3	...	
Indigestion	...	8	...	8	...	
Sprue	...	1	...	1	...	
Stomatitis	...	2	...	2	...	
Constipation	1	6	...	7	...	
Colic	...	11	...	11	...	
Diarrhœa	2	140	60	142	6	
Hæmorrhoids	...	5	...	5	...	
Fistula in Ano	...	1	...	1	...	
Cirrhosis of Liver	...	5	3	5	1	
Congestion „ (acute)	...	1	1	1	...	
Hepatitis and abscess	...	2	1	2	...	
Biliary Colic	...	1	...	1	...	
Jaundice	...	2	...	2	...	
Atrophy of Liver	...	1	1	1	...	
Dropsy	1	4	2	5	...	
DISEASES OF THE LYMPHATIC SYSTEM.						
Perisplenitis	...	1	...	1	1	
Hypertrophy of Spleen	...	1	...	1	...	
Inflammation of Pland	...	12	...	12	2	
DISEASES OF THE URINARY SYSTEM.						
Bright's Disease	1	6	2	7	...	
Cystitis	...	2	...	2	...	
DISEASES OF THE GENERATIVE SYSTEM.						
Stricture Urethra	...	4	...	4	...	
Extravasation of Urine	...	1	1	1	...	
Chancroid	...	8	...	8	...	
Ulcer of Scrotum	...	1	...	1	...	
Phimosis	...	2	...	2	...	
Paraphimosis	...	1	...	1	...	
Orchitis	...	5	...	5	...	
Metritis	...	1	...	1	...	
Galactorrhœa	...	1	...	1	...	
DISEASE OF THE ORGAN OF LOCOMOTION.						
Tubercle of Wrist	1	...	...	1	...	
Caries Lower Jaw	1	1	1	2	...	
Necrosis of Tibia	2	...	1	2	...	
Caries of Tibia	...	1	...	1	1	
„ Tarsus bone	...	1	...	1	...	
Inflammation Joints Knee	...	4	...	4	...	
Angular Curvature of Spine	1	...	...	1	...	
Myalgia	...	1	...	1	...	
Cellulitis	...	7	...	7	...	
Abscess	1	15	1	16	1	
Carbuncle	...	3	...	3	...	
DISEASES OF THE SKIN.						
Dermatitis	...	1	...	1	...	
Eczema	...	6	...	6	...	
<i>Carried forward...</i>	53	960	220	1,013	58	



*Return of Diseases and Deaths in 1902 at the Province Wellesley Hospitals.—Concluded.*

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	53	960	220	1,013	58	
DISEASES OF THE SKIN— <i>Continued.</i>						
Impetigo ...	...	3	...	3	...	
Pemphigus ...	...	1	...	1	...	
Lichen ...	...	1	...	1	...	
Onychia ...	...	1	...	1	...	
Ulcer ...	12	129	...	141	17	
Boil ...	...	1	...	1	...	
Corn ...	...	1	...	1	...	
Gangrene of Foot ...	...	1	1	1	...	
Non Malignant New Growth ...	...	2	...	2	...	
GENERAL INJURIES.						
Apoplexy Heat ...	...	1	1	1	...	
Exhaustion ...	...	1	1	1	...	
LOCAL INJURIES.						
Sprain ...	...	7	...	7	...	
Burn ...	...	8	1	8	...	
Abrasion ...	...	1	...	1	...	
Scalp Wound ...	...	33	...	33	...	
Wound of Face ...	...	4	...	4	...	
" of Lip ...	...	1	...	1	...	
Contusion Lip ...	...	1	...	1	...	
Wound of Ear ...	1	2	...	3	...	
" of Neck ...	...	1	...	1	...	
Contusion Neck ...	...	2	...	2	...	
Cut Throat ...	...	1	1	1	...	
Punctured Wound Axilla ...	...	1	...	1	...	
Penetrating Wound Thorax into Lung ...	1	6	...	7	...	
Wound of Back ...	...	1	...	1	...	
Contusion Back ...	...	1	...	1	...	
Concussion of Spine ...	...	1	...	1	...	
Wound Perineum ...	1	...	...	1	...	
" Upper Extremities ...	...	6	...	6	...	
Contusion Upper Extremities ...	...	6	...	6	...	
" Lower Extremities ...	...	4	...	4	...	
Wound Lower Extremities ...	...	15	1	15	...	
Contusion of Abdomen ...	...	1	...	1	...	
Wound of Abdomen ...	...	1	...	1	...	
Rupture of Urethra ...	...	1	...	1	...	
Fracture of Clavicle ...	...	1	...	1	...	
" of Humerus ...	...	2	...	2	...	
" of Radius ...	...	2	...	2	...	
" of Ulna ...	...	2	...	2	...	
" of Ulna and Radius ...	...	1	...	1	...	
" of Ribs ...	...	1	...	1	...	
" of Patella Transverse ...	...	1	...	1	...	
" of Femur ...	...	1	...	1	...	
" of Tibia and Fibula ...	...	1	...	1	...	
" of Toe Compound ...	...	1	...	1	...	
" of Skull ...	...	3	2	3	...	
Dislocation of Patella ...	...	1	...	1	...	
Multiple Injuries ...	...	2	...	2	...	
" Wound ...	...	2	...	2	...	
Gunshot Wound ...	...	2	...	2	...	
Buffalo Gore ...	...	1	...	1	...	
OPERATIONS.						
Knee Joints ...	...	2	...	2	...	
" " removal forgn. body ...	...	1	...	1	...	
Amputation of Upper Arm ...	...	1	1	1	...	Death of Epilepsy.
" of Finger ...	...	1	...	1	...	
Hydrocele ...	...	1	...	1	...	
Circumcision ...	...	8	...	8	...	
Epithelioma ...	...	1	...	1	...	
Difficult Labour (forceps) ...	...	3	1	3	...	
Removal Cataract ...	1	...	...	1	...	
POISONS.						
Ptomaine Poisoning ...	...	1	...	1	...	
Worms ...	...	5	...	5	...	
Observation ...	1	63	...	64	1	
No Discoverable Disease ...	...	9	...	9	...	
Grand total...	70	1,327	230	1,397	76	

## Return of Diseases and Deaths in 1902 at the Malacca Hospitals.—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward</i>	115	1,640	148	1,755	75	
DISEASES OF THE CIRCULATORY SYSTEM.						
Valvular Disease of Heart, Mitral ...	2	16	1	18	...	
DISEASES OF THE RESPIRATORY SYSTEM.						
Laryngitis ...	...	1	...	1	...	
Bronchial Catarrh ...	...	3	...	3	...	
Bronchitis ...	...	10	1	10	...	
Asthma ...	...	16	...	16	2	
Pneumonia ...	...	9	2	9	...	
Phthisis ...	3	75	29	78	3	
Empyema ...	...	1	1	1	...	
DISEASES OF THE DIGESTIVE SYSTEM.						
Sorethroat ...	...	2	...	2	...	
Dyspepsia ...	...	22	2	22	...	
Impaction of fæces ...	...	1	...	1	...	
Hernia, Inguinal Reducible ...	...	4	...	4	...	
" " Strangulated ...	...	1	1	1	...	
Colic ...	...	51	...	51	...	
Diarrhoea ...	4	124	31	128	6	
Fistula in Ano ...	...	6	...	6	...	
Hepatitis ...	...	3	...	3	...	
Abscess of Liver ...	...	1	1	1	...	
Perihepatitis ...	...	1	...	1	...	
Jaundice ...	...	4	...	4	...	
Ascites ...	...	4	1	4	...	
DISEASES OF THE LYMPHATIC SYSTEM.						
Abscess of the Spleen ...	...	2	...	2	...	
Hypertrophy of Spleen ...	...	39	...	39	3	
Bubo ...	...	14	...	14	...	
Elephantiasis, Scroti ...	...	1	...	1	...	
DISEASES OF THE URINARY SYSTEM.						
Chronic Nephritis, ...	5	48	15	53	1	
Calculus ...	...	6	...	6	...	
DISEASES OF THE GENERATIVE SYSTEM.						
Stricture Urethra ...	...	2	...	2	...	
Inflammation of Prostate ...	...	1	...	1	...	
Phimosi ...	...	1	...	1	...	
Paraphimosi ...	...	1	...	1	...	
Ulcer Penis ...	...	8	...	8	...	
Abscess Scrotum ...	...	1	...	1	2	
Sloughing Scrotum ...	2	1	...	3	...	
Eczema Scrotum ...	...	5	...	5	...	
Perineal Abscess ...	...	1	...	1	...	
Inflamn. of Spermatic Cord ...	...	1	...	1	...	
Hæmatocele ...	...	1	...	1	...	
Hydrocele ...	...	2	...	2	...	
Orchitis ...	...	6	...	6	...	
Hernia Testis ...	...	3	...	3	...	
Vaginitis ...	...	1	...	1	...	
DISEASES OF THE ORGANS OF LOCOMOTION.						
Periostitis ...	...	5	...	5	...	
Necrosis ...	1	21	4	22	1	
Synovitis ...	...	6	...	6	1	
Lumbar Abscess ...	...	1	...	1	1	
<i>Carried forward</i> ...	132	2,173	237	2,305	95	



*Return of Diseases and Deaths in 1902 at the Province Wellesley Hospitals.—Concluded.*

Diseases,	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	53	960	220	1,013	58	
DISEASES OF THE SKIN— <i>Continued.</i>						
Impetigo ...	...	3	...	3	...	
Pemphigus ...	...	1	...	1	...	
Lichen ...	...	1	...	1	...	
Onychia ...	...	1	...	1	...	
Ulcer ...	12	129	...	141	17	
Boil ...	...	1	...	1	...	
Corn ...	...	1	...	1	...	
Gangrene of Foot ...	...	1	1	1	...	
Non Malignant New Growth ...	...	2	...	2	...	
GENERAL INJURIES.						
Apoplexy Heat ...	...	1	1	1	...	
Exhaustion ...	...	1	1	1	...	
LOCAL INJURIES.						
Sprain ...	...	7	...	7	...	
Burn ...	...	8	1	8	...	
Abrasion ...	...	1	...	1	...	
Scalp Wound ...	...	33	...	33	...	
Wound of Face ...	...	4	...	4	...	
" of Lip ...	...	1	...	1	...	
Contusion Lip ...	...	1	...	1	...	
Wound of Ear ...	1	2	...	3	...	
" of Neck ...	...	1	...	1	...	
Contusion Neck ...	...	2	...	2	...	
Cut Throat ...	...	1	1	1	...	
Punctured Wound Axilla ...	...	1	...	1	...	
Penetrating Wound Thorax into Lung ...	1	6	...	7	...	
Wound of Back ...	...	1	...	1	...	
Contusion Back ...	...	1	...	1	...	
Concussion of Spine ...	...	1	...	1	...	
Wound Perineum ...	1	...	...	1	...	
" Upper Extremities ...	...	6	...	6	...	
Contusion Upper Extremities ...	...	6	...	6	...	
" Lower Extremities ...	...	4	...	4	...	
Wound Lower Extremities ...	...	15	1	15	...	
Contusion of Abdomen ...	...	1	...	1	...	
Wound of Abdomen ...	...	1	...	1	...	
Rupture of Urethra ...	...	1	...	1	...	
Fracture of Clavicle ...	...	1	...	1	...	
" of Humerus ...	...	2	...	2	...	
" of Radius ...	...	2	...	2	...	
" of Ulna ...	...	2	...	2	...	
" of Ulna and Radius ...	...	1	...	1	...	
" of Ribs ...	...	1	...	1	...	
" of Patella Transverse ...	...	1	...	1	...	
" of Femur ...	...	1	...	1	...	
" of Tibia and Fibula ...	...	1	...	1	...	
" of Toe Compound ...	...	1	...	1	...	
" of Skull ...	...	3	2	3	...	
Dislocation of Patella ...	...	1	...	1	...	
Multiple Injuries ...	...	2	...	2	...	
" Wound ...	...	2	...	2	...	
Gunshot Wound ...	...	2	...	2	...	
Buffalo Gore ...	...	1	...	1	...	
OPERATIONS.						
Knee Joints ...	...	2	...	2	...	
" " removal forgn. body ...	...	1	...	1	...	
Amputation of Upper Arm ...	...	1	1	1	...	Death of Epilepsy.
" of Finger ...	...	1	...	1	...	
Hydrocele ...	...	1	...	1	...	
Circumcision ...	...	8	...	8	...	
Epithelioma ...	...	1	...	1	...	
Difficult Labour (forceps) ...	...	3	1	3	...	
Removal Cataract ...	1	...	...	1	...	
POISONS.						
Ptomaine Poisoning ...	...	1	...	1	...	
Worms ...	...	5	...	5	...	
Observation ...	1	63	...	64	1	
No Discoverable Disease ...	...	9	...	9	...	
Grand total...	70	1,327	230	1,397	76	

## Return of Diseases and Deaths in 1902 at the Malacca Hospitals.—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward</i>	115	1,640	148	1,755	75	
DISEASES OF THE CIRCULATORY SYSTEM.						
Valvular Disease of Heart, Mitral ...	2	16	1	18	...	
DISEASES OF THE RESPIRATORY SYSTEM.						
Laryngitis ...	...	1	...	1	...	
Bronchial Catarrh ...	...	3	...	3	...	
Bronchitis ...	...	10	1	10	...	
Asthma ...	...	16	...	16	2	
Pneumonia ...	...	9	2	9	...	
Phthisis ...	3	75	29	78	3	
Empyema ...	...	1	1	1	...	
DISEASES OF THE DIGESTIVE SYSTEM.						
Sorethroat ...	...	2	...	2	...	
Dyspepsia ...	...	22	2	22	...	
Impaction of fæces ...	...	1	...	1	...	
Hernia, Inguinal Reducible ...	...	4	...	4	...	
„ „ Strangulated ...	...	1	1	1	...	
Colic ...	...	51	...	51	...	
Diarrhoea ...	4	124	31	128	6	
Fistula in Ano ...	...	6	...	6	...	
Hepatitis ...	...	3	...	3	...	
Abscess of Liver ...	...	1	1	1	...	
Perihepatitis ...	...	1	...	1	...	
Jaundice ...	...	4	...	4	...	
Ascites ...	...	4	1	4	...	
DISEASES OF THE LYMPHATIC SYSTEM.						
Abscess of the Spleen ...	...	2	...	2	...	
Hypertrophy of Spleen ...	...	39	...	39	3	
Bubo ...	...	14	...	14	...	
Elephantiasis, Scroti ...	...	1	...	1	...	
DISEASES OF THE URINARY SYSTEM.						
Chronic Nephritis, ...	5	48	15	53	1	
Calculus ...	...	6	...	6	...	
DISEASES OF THE GENERATIVE SYSTEM.						
Stricture Urethra ...	...	2	...	2	...	
Inflammation of Prostate ...	...	1	...	1	...	
Phimosi ...	...	1	...	1	...	
Paraphimosis ...	...	1	...	1	...	
Ulcer Penis ...	...	8	...	8	...	
Abscess Scrotum ...	...	1	...	1	2	
Sloughing Scrotum ...	2	1	...	3	...	
Eczema Scrotum ...	...	5	...	5	...	
Perineal Abscess ...	...	1	...	1	...	
Inflamn. of Spermatic Cord ...	...	1	...	1	...	
Hæmatocele ...	...	1	...	1	...	
Hydrocele ...	...	2	...	2	...	
Orchitis ...	...	6	...	6	...	
Hernia Testis ...	...	3	...	3	...	
Vaginitis ...	...	1	...	1	...	
DISEASES OF THE ORGANS OF LOCOMOTION.						
Periostitis ...	...	5	...	5	...	
Necrosis ...	1	21	4	22	1	
Synovitis ...	...	6	...	6	1	
Lumbar Abscess ...	...	1	...	1	1	
<i>Carried forward</i> ...	132	2,173	237	2,305	95	



## Return of Diseases and Deaths in 1902 at the Malacca Hospitals.—Continued.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	132	2,173	237	2,305	95	
DISEASES OF ORGANS OF LOCOMOTION—Continued.						
Sub. Diaphragmatic Abscess	...	1	1	1	...	
Lumbago	...	7	...	7	...	
Pleurodynia	...	2	...	2	...	
Thecal Abscess	...	3	...	3	...	
Suppurating Bursa of Patella	...	1	...	1	...	
Flat foot	...	1	...	1	...	
DISEASES OF THE CON- NECTIVE TISSUE.						
Cellulitis	...	8	...	8	...	
Abscess	2	31	...	33	2	
Gangrene,	...	2	1	2	...	
Elephantiasis	...	3	...	3	...	
DISEASES OF THE SKIN.						
Eczema	...	10	...	10	1	
Herpes Zoster	...	2	...	2	...	
Ichthyosis	...	2	...	2	1	
Ulcer	54	600	...	654	59	
Boil	...	5	...	5	...	
Carbuncle	...	3	...	3	...	
Onychia	...	4	...	4	...	
Rupia	...	1	...	1	...	
POISONS.						
Alcohol	...	3	...	3	...	
Stramonium	...	1	...	1	...	
Vaccination	...	3	...	3	...	
Alligator Bite	1	...	...	1	...	
Insect Sting	...	1	...	1	...	
INJURIES.						
Burns and Scalds	1	10	1	11	...	
Multiple Injury	1	16	...	17	...	
Contusions	...	4	...	4	...	
Wounds	...	15	...	15	...	
Compression of Brain	...	1	1	1	...	
Fracture of Skull	...	1	1	1	...	
Scalp Wound (bone not ex- posed)	...	11	...	11	...	
Scalp Wound (bone exposed)	...	3	...	3	...	
Contusion Face	...	4	...	4	...	
Wound "	...	5	...	5	...	
" Neck	...	1	...	1	...	
Contusion Chest	...	2	...	2	...	
Wound "	...	2	...	2	...	
Contusion Back	...	3	...	3	...	
Wound "	...	5	...	5	...	
Contusion, Abdomen	...	2	...	2	...	
Wd. of Abdominal Parietes...	...	4	1	4	...	
Wound Perineum	...	1	...	1	...	
Sprain Upper Extremity	...	1	...	1	...	
Wound " "	...	10	...	10	...	
Fracture Humerus	...	2	...	2	...	
Contusion Lower Extremity	...	2	...	2	...	
Sprain " "	...	3	...	3	...	
Wound " "	...	14	...	14	...	
Compd. Comminuted Frac- ture Femur (Gun shot)	...	1	...	1	1	
Fracture Tibia	...	1	...	1	...	
" " and Fibula	...	1	...	1	1	
Compd. Fract. Tibia & Fibula	...	1	...	1	...	
<i>Carried forward...</i>	191	2,993	243	3,184	160	

## Return of Diseases and Deaths in 1902 at the Malacca Hospitals.—Concluded.

Diseases.	Remain- ing in Hospital at end of 1901.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1902.	Remarks.
		Admis- sions.	Deaths.			
<i>Brought forward</i> ...	191	2,993	243	3,184	160	
<b>OPERATIONS.</b>						
Removal of foreign body in foot ...	...	3	...	3	...	
Amputation of Finger ...	...	2	...	2	1	
"    "    Leg ...	...	1	...	1	...	
Removal of Nasal Polypi ...	...	1	...	1	...	
Excision of Eyeball ...	...	1	...	1	...	
Laparotomy ...	...	1	...	1	...	
Oper. for Fistula in Ano. ...	...	1	...	1	...	
"    "    Phimosis ...	...	4	...	4	...	
<b>PARASITES.</b>						
Sarcoptes Scabei ...	2	25	...	27	2	
Anchylostomum duodenale ...	...	4	...	4	...	
Tinea Tonsurans ...	...	4	...	4	2	
Malingering ...	...	4	...	4	...	
Observation ...	...	49	...	49	1	
No discernible disease ...	...	4	...	4	...	
Grand total...	193	3,097	243	3,290	166	